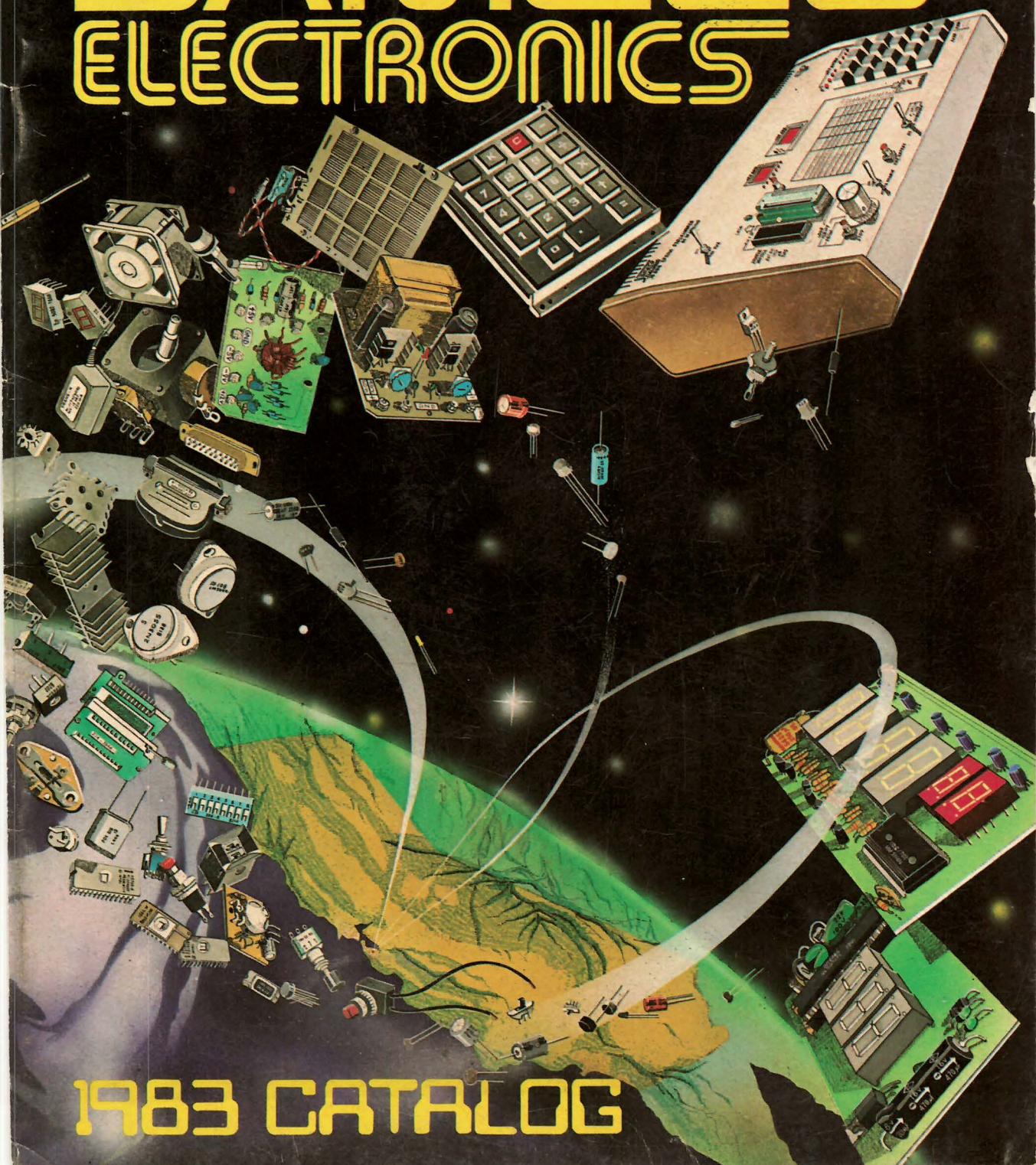


# JAMECO ELECTRONICS

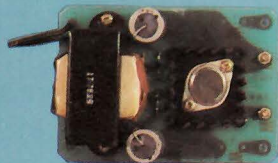


## 1983 CATALOG



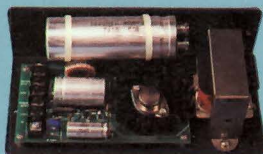
## 5 VOLT POWER SUPPLY

JE200 Page 63 \$14.95



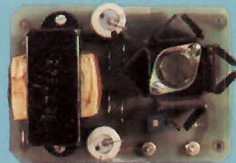
## SWITCHING POWER SUPPLY

JE224 Page 63 \$79.95



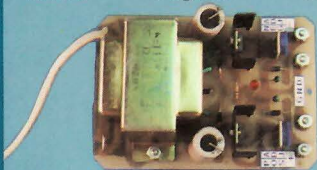
## ADJUSTABLE POWER SUPPLY

JE210 Page 63 \$19.95



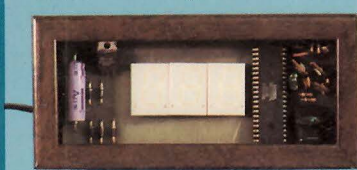
## DUAL POWER SUPPLY KIT

JE215 Page 63 \$24.95



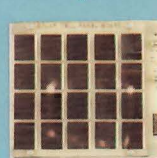
## DIGITAL THERMOMETER KIT

JE300 Page 62 \$39.95



## SOLAR CELL PANEL KIT

JE305 Page 62 \$39.95



## HEXADECIMAL ENCODER KIT

JE600/DTE-HK Page 61 \$99.95



## EPROM PROGRAMMER KIT

JE608K Page 64 \$399.95



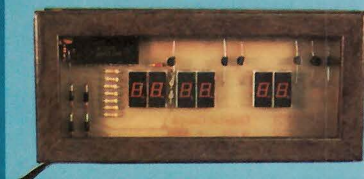
## ASCII KEYBOARD KIT

JE610/DTE-AK Page 61 \$124.95



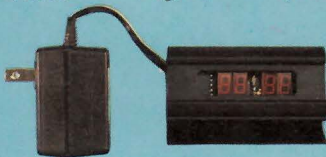
## DIGITAL CLOCK KIT

JE701 Page 62 \$19.95



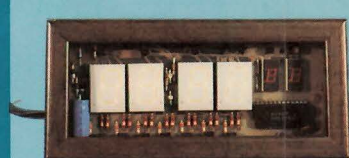
## DIGITAL CLOCK KIT

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## DIGITAL CLOCK KIT

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## AUXILIARY BOARD KITS

JE212 Page 61 \$ 9.95

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	<b>Analogic Corporation</b> Wakefield, MA 01880 (617) 246-0300
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	<b>Burr-Brown</b> International Airport Park Tucson, AZ 85734 (602) 746-1111
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# 7400 SERIES TTL\*






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SN7400N	14	Quad 2-Input NAND Gate	\$ .19
SN7401N	14	Quad 2-Input NAND Gate (Open Collector)	.19
SN7402N	14	Quad 2-Input NOR Gate	.25
SN7403N	14	Quad 2-Input NAND Gate (Open Collector)	.25
SN7404N	14	Hex Inverter (9016)	.25
SN7405N	14	Hex Inverter (Open Collector)	.25
SN7406N	14	Hex Inverter Buffer/Driver (O.C. Hi-Voltage)	.29
SN7407N	14	Hex Buffer/Driver (O.C. Hi-Voltage)	.29
SN7408N	14	Quad 2-Input AND Gate	.25
SN7409N	14	Quad 2-Input AND Gate (Open Collector)	.25
SN7410N	14	Triple 3-Input NAND Gate	.25
SN7411N	14	Triple 3-Input AND Gate	.25
SN7412N	14	Triple 3-Input NAND (O.C.)	.35
SN7413N	14	Dual 4-Input Schmitt Trigger	.35
SN7414N	14	Hex Schmitt Trigger Inverter	.49
SN7416N	14	Hex Inverter Buffer/Driver (O.C. Hi-Voltage)	.25
SN7417N	14	Hex Buffer/Driver (O.C. Hi-Voltage)	.25
SN7420N	14	Dual 4-Input NAND Gate	.19
SN7421N	14	Dual 4-Input Positive AND Gate	.35
SN7422N	14	4-Input NAND Gate (O.C.)	.45
SN7423N	16	Expandable Dual 4-Input NOR Gate	.59
SN7425N	14	Dual 4-Input NOR Gate	.29
SN7426N	14	Quad 2-Input TTL/MOS Inter. Gate (DM8810)	.29
SN7427N	14	Triple 3-Input NOR Gate	.25
SN7428N	14	Quad 2-Input NOR Buffer	.49
SN7430N	14	8-Input NAND Gate	.25
SN7432N	14	Quad 2-Input OR Gate	.29
SN7437N	14	Quad 2-Input NAND Buffer	.25
SN7438N	14	Quad 2-Input NAND Buffer (Open Collector)	.29
SN7439A	14	Quad 2-Input NAND Buffer (Open Collector)	.59
SN7440N	14	Dual 4-Input NAND Buffer	.19
SN7441N	16	BCD-to-Decimal Decoder/Nixie TM Driver	.89
SN7442N	16	BCD-to-Decimal Decoder	.45
SN7443N	16	Excess 3-to-Decimal	.99
SN7444N	16	Excess 3-Gray-to-Decimal	.99
SN7445N	16	BCD-to-Decimal Decoder/Driver	.69
SN7446N	16	BCD-to-7 Segment Decoder/Driver (30V out)	.69
SN7447N	16	BCD-to-7 Segment Decoder/Driver (15V out)	.69
SN7448N	16	BCD-to-7 Segment Decoder/Driver	.69
SN7450N	14	Expan. Dual 2-Wide 2-In. AND/OR/Invert Gate	.19
SN7451N	14	Dual 2-Wide 2-In. AND/OR/Invert Gate	.19
SN7453N	14	Expan. 4-Wide 2-In. AND/OR/Invert Gate	.19
SN7454N	14	4-Wide 2-In. AND/OR/Invert Gate	.19
SN7459A	14	Dual 2-Wide 2-3-Input AND/OR/Invert Gate	.25
SN7460N	14	Dual 4-Input Expander	.19
SN7470N	14	Edge-Triggered JK Flip Flop	.29
SN7472N	14	JK Master/Slave Flip Flop	.29
SN7473N	14	Dual JK Master/Slave Flip Flop (DM8501)	.35
SN7474N	14	Dual D Flip Flop	.35
SN7475N	16	4-Bit Bistable Latch	.45
SN7476N	16	Dual JK Master/Slave Flip Flop	.35
SN7479N	14	Dual D Flip Flop	4.95
SN7480N	14	Gated Full Adder	.69
SN7482N	14	2-Bit Full Adder	1.19
SN7483N	16	4-Bit Binary Full Adder	.59
SN7485N	16	4-Bit Magnitude Comparator	.59
SN7486N	14	Quad 2-Input EXCLUSIVE-OR Gate	.35
SN7489N	16	64-Bit Random Access Read/Write Mem. (3101)	2.25
SN7490N	14	Decade Counter	.39
SN7491N	14	8-Bit Shift Register	.59
SN7492N	14	Divide-by-12 Counter	.39
SN7493N	14	4-Bit Binary Counter	.39
SN7494N	14	4-Bit Shift Register (Parallel-IN, Serial-OUT)	.69
SN7495N	14	4-Bit Right Shift/Left Shift Register	.49
SN7496N	16	5-Bit Parallel-IN, Parallel-OUT Shift Register	.49
SN7497N	16	Synchronous 6-Bit Binary Rate Multipliers	2.75
SN74100N	24	4-Bit Bistable Latch	1.49
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SN74105N	14	Gated J-K Master/Slave Flip Flop	.89
SN74107N	14	Dual J-K Master/Slave Flip Flop	.29
SN74109N	16	Dual J-K Pos-Edge Triggered F-F (9024)	.39
SN74116N	24	Dual 4-Bit Latches w/Clear (9308)	1.49

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SN74121N	14	Monostable Multivibrator	.39
SN74122N	14	Retriggerable Mono. Multivibrator w/ Clear	.55
SN74123N	16	TTL/Monostable Multivibrator	.49
SN74125N	14	Tri-State Quad Bus Buffer (DM8093)	.45
SN74126N	14	Tri-State Quad Bus Buffer (DM8094)	.45
SN74132N	14	Quad Schmitt Trigger	.49
SN74136N	14	Quad 2-Input Exclusive-OR Gate	.69
SN74141N	16	BCD-to-Decimal Decoder/Driver	.69
SN74142N	16	BCD Counter-Latch-Driver	2.95
SN74143N	24	Center Decoder	2.95
SN74144N	24	Center Decoder	2.95
SN74145N	16	BCD-to-Decimal Decoder/Driver	.59
SN74147N	16	10/4 Priority Encoder	1.49
SN74148N	16	Priority Encoder (9318)	1.19
SN74150N	24	16-Line to 1-Line Multiplexer	1.19
SN74151N	16	8-Channel Digital Multiplexer	.59
SN74152N	14	8-Channel Data Selector/Multiplexer	.59
SN74153N	16	Dual 4/1 Multiplexer	.59
SN74154N	24	4- to 16-Line Decoder/Demultiplexer (9311)	1.25
SN74155N	16	Dual 2/4 Demultiplexer	.59
SN74156N	16	Dual 2/4 Demultiplexer (O.C.)	.59
SN74157N	16	Quad 2/1 Data Selector (9322)	.59
SN74160N	16	Decade Counter with Asynchronous Clear	.69
SN74161N	16	Synchronous 4-Bit Counter (9316)	.69
SN74162N	16	Synchronous 4-Bit Counter	.69
SN74163N	16	Synchronous 4-Bit Counter	.69
SN74164N	14	8-Bit Serial Shift Register (DM8570)	.69
SN74165N	16	Parallel Load 8-Bit Serial Shift Reg. (DM8590)	.69
SN74166N	16	8-Bit Shift Register	.89
SN74167N	16	Rate Multiplier	2.79
SN74170N	16	4x4 Register File	1.29
SN74172N	24	Register File	4.95
SN74173N	16	4-Bit Tri-State Register (DM8551)	.69
SN74174N	16	Hex D Flip Flop with Clear	.69
SN74175N	16	Quad D Flip Flop with Clear	.69
SN74176N	14	35MHz Presettable Decade Counter (N8280)	.69
SN74177N	14	35MHz Presettable Binary Counter (N8281)	.69
SN74179N	16	4-Bit Parallel-Access Shift Register	1.49
SN74180N	14	8-Bit Odd/Even Parity Generator/Checker	.69
SN74181N	24	Arithmetic Logic Unit	1.95
SN74182N	16	Look-Ahead Carry Generator	.89
SN74184N	16	BCD-to-Binary Converter	1.95
SN74185N	16	Binary-to-BCD Converter	1.95
SN74189N	16	T.S. 64-Bit Rndm-Acc. Read/Write Mem. (DM8599)	1.95
SN74190N	16	Up/Down Decade Counter	.69
SN74191N	16	Synchronous Binary Up/Down Counter	.69
SN74192N	16	Decade Up/Down Counter (DM8560)	.69
SN74193N	16	Binary Up/Down Counter (DM8563)	.69
SN74194N	16	4-Bit Bi-Directional Shift Register	.69
SN74195N	16	4-Bit Parallel-Access Shift Register (DM8300)	.69
SN74196N	14	Presettable Decade Counter (N8290)	.89
SN74197N	14	Presettable Binary Counter (N8291)	.89
SN74198N	24	8-Bit Shift Register	1.19
SN74199N	24	8-Bit Shift Register	1.19
SN74221N	16	Dual One-Shot Schmitt Trigger	1.19
SN74251N	16	Tri-State 8-Channel Multiplexer (DM8121N)	.79
SN74259N	16	8-Bit Addressable Latch (9334)	1.95
SN74265N	16	Quad Complementary-Output Elements	.99
SN74276N	20	Quad J-K Flip Flop	1.95
SN74279N	16	Quad Debouncer	.79
SN74283N	16	4-Bit Binary Full Address with Fast Carry	1.49
SN74284N	16	Tri-State 4-Bit Multiplexer	2.95
SN74285N	16	Tri-State 4-Bit Multiplexer	2.95
SN74298N	16	Quad 2-Input Multiplexer w/Storage	.89
SN74365N	16	Tri-State Hex Buffer (DM8095)	.55
SN74366N	16	Tri-State Hex Buffer (DM8096) Inverter	.55
SN74367N	16	Tri-State Hex Buffer (DM8097)	.55
SN74368N	16	Tri-State Hex Buffer (DM8098) Inverter	.55
SN74390N	16	Individual Clocks for A and B Flip Flops	1.49
SN74393N	14	Dual 4-Bit Binary Counter w/Individual Clocks	1.49

\*5400 Series is a direct replacement for 7400 Series

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— DUAL IN-LINE PACKAGES AS PER NATIONAL SEMICONDUCTOR'S SPECIFICATIONS —

 <p>C.N.E., or V Packages 8 pin Mini-Dip .250W x .400L</p>	 <p>A, B or N Packages 14, 16, 18 or 20 pin .250W x .400L</p>	 <p>L or N Package 22 pin .40W x 1.10L</p>	 <p>J.L.N. or P Package 24, 28, 40 pin</p>	 <p>24-.515W x 1.29L 28-.515W x 1.49L 40-.530W x 2.06L</p>
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# 74S00 SERIES — Schottky

Part No.	Pins	Function	Price	Part No.	Pins	Function	Price
74S00	14	Quad 2-Input NAND Gate	\$ .35	74S182	16	Look-Ahead Carry Generators	1.49
74S02	14	Quad 2-Input NOR Gate	.35	• 74S188*	16	256-Bit (32x8) PROM (Open Collector)	1.49
74S03	14	Quad 2-Input NAND Gate (Open Collector)	.35	• 74S189	16	64-Bit (16x4) RAM Tri-State	1.95
74S04	14	Hex Inverter	.45	74S194	16	4-Bit Bi-Directional Shift Register	1.49
74S05	14	Hex Inverter (Open Collector)	.45	74S195	16	4-Bit Parallel Shift Register	1.49
74S08	14	Quad 2-Input AND Gate	.39	74S196	14	Presetable Decade Counter (82S90)	1.49
74S09	14	Quad 2-Input AND Gate (Open Collector)	.39	74S200	16	256-Bit (256x1) RAM Tri-State	3.95
74S10	14	Triple 3-Input NAND Gate	.35	74S206	16	256-Bit (256x1) RAM Open Collector	3.95
74S11	14	Triple 3-Input AND Gate	.35	74S240	20	Tri-State Octal Line Driver	2.25
74S15	14	Triple 3-Input AND Gate (Open Collector)	.35	74S241	20	Tri-State Octal Line Driver (Non-Inverting)	2.25
74S20	14	Dual 4-Input NAND Gate	.35	74S242	14	Quadruple Bus Transceiver	2.49
74S22	14	Dual 4-Input NAND Gate (Open Collector)	.35	74S243	14	Quadruple Bus Transceiver	2.49
74S30	14	8-Input NAND Gate	.35	74S244	20	Tri-State Octal Line Driver	1.19
74S32	14	Quad 2-Input OR Gate	.45	74S251	16	Tri-State 74S151	1.19
74S38	14	Quad 2-Input NAND Buffer (Open Collector)	.89	74S253	16	Tri-State 74S153	1.19
74S40	14	Dual 4-Input NAND Buffer	.39	74S257	16	Tri-State 74S157	1.19
74S51	14	Dual 2-Input AND-OR-Invert Gate	.35	74S258	16	Tri-State 74S158	1.19
74S64	14	AND-OR-Invert Gate	.39	74S260	14	Dual 5-Input NOR Gate	.79
74S65	14	AND-OR-Invert Gate (Open Collector)	.39	74S280	14	9-Bit Parity Generator	1.95
74S74	14	Dual D Flip Flop	.55	• 74S287*	16	1K-Bit (256x4) PROM Tri-State	1.95
74S85	16	4-Bit Magnitude Comparator	2.49	• 74S288*	16	256-Bit (32x8) PROM Tri-State	1.95
74S86	14	Quad Exclusive OR Gate	.55	• 74S289	16	64-Bit (16x4) RAM Open Collector	2.25
74S112	16	Dual JK Flip Flop	.55	74S299	20	8-Bit Universal Shift/Storage Register	5.95
74S113	14	Dual JK Flip Flop (Preset)	.55	74S373	20	Octal D-Type Latch	2.49
74S114	14	Dual JK Flip Flop with Preset, Comm., Clk., Clr.	.55	74S374	20	Octal D Flip Flop Tri-State	2.49
74S124	16	Dual Voltage-Controlled Oscillator	2.95	74S379	16	4-Bit Register, Common Enable	2.49
74S133	16	13-Input NAND Gate	.45	74S381	20	Arithmetic Logic Unit/Function Generator	5.95
74S134	16	Tri-State 12-Input NAND Gate	.50	• 74S387*	16	1K-Bit (256x4) PROM Open Collector	1.95
74S135	16	Quad Exclusive OR/NOR Gate	.69	74S412	24	8-Bit Input/Output (DP8212)	2.25
74S136	14	Quad Exclusive OR Gate	1.39	74S428	28	System Controller/Bus Driver (DP8228)	3.49
74S138	16	Expandable 3/8 Decoder	.89	74S438	28	System Controller (DP8238)	4.49
74S139	16	Expandable 2/4 Decoder	.89	• 74S471*	20	2K-Bit (256x8) PROM Tri-State (TBP28L22N)	5.95
74S140	14	Dual 4-Input NAND Driver	.55	• 74S472*	20	4K-Bit (512x8) PROM Tri-State	4.95
74S151	16	8-Input Multiplexer	.99	• 74S473*	20	4K-Bit (512x8) PROM Open Collector	4.95
74S153	16	Dual 4/1 Multiplexer	.99	• 74S474*	24	4K-Bit (512x8) PROM Tri-State	4.95
74S157	16	Quad 2-Input Multiplexer	.99	• 74S475*	24	4K-Bit (512x8) PROM Open Collector	4.95
74S158	16	Quad 2-Input Multiplexer (Inverted)	.99	• 74S476*	18	4K-Bit (1024x4) PROM Tri-State	6.95
74S160	16	Decade Counter with Asynchronous Clear	2.49	• 74S478*	24	8K-Bit (1024x8) PROM (TBP28S86N) O.C.	8.95
74S161	16	Presetable Binary Counter	2.49	• 74S570*	16	2K-Bit (512x4) PROM Open Collector	2.95
74S162	16	Presetable Decade Counter Synchronous	2.49	74S571*	16	2K-Bit (512x4) PROM Tri-State	2.95
74S163	16	Synchronous 4-Bit Counter	2.49	74S572*	18	4K-Bit (1024x4) PROM Open Collector	4.95
74S174	16	Hex D Flip Flop	.99	74S573*	18	4K-Bit (1024x4) PROM Tri-State	4.95
74S175	16	Quad D Flip Flop	.99	74S940	20	Octal Buffer with Tri-State Outputs	2.49
74S181	24	Arithmetic Logic Unit	3.75	74S941	20	Octal Buffer with Tri-State Outputs	2.49

• Bipolar

\*See pages 12,13 for more PROMs and Cross-Reference Information

## 74L00 SERIES

74L00	14	Quad 2-Input NAND Gate	\$ .45	74L85	16	4-Bit Magnitude Comparator	\$1.95
74L02	14	Quad 2-Input NOR Gate	.49	74L86	14	Quad Exclusive-OR Gate	.99
74L03	14	Quad 2-Input NAND Gate (Open Collector)	.49	74L90	14	Decade Counter	2.25
74L04	14	Hex Inverter	.55	74L91	14	8-Bit Shift Register	2.49
74L05	14	Hex Inverter (Open Collector)	.55	74L93	14	4-Bit Binary Counter	2.49
74L10	14	Triple 3-Input NAND Gate	.55	74L95	14	4-Bit Right Shift/Left Shift Register	2.49
74L20	14	Dual 4-Input NAND Gate	.55	74L98	16	4-Bit Storage Register	2.49
74L30	14	8-Input NAND Gate	.59	74L121	14	Monostable Multivibrator	1.05
74L32	14	Quad 2-Input Positive OR Gate	.69	74L123	16	TTL/Monostable Multivibrator	1.05
74L42	16	BCD-to-Decimal Decoder	1.95	74L154	24	4-Line to 16-Line Decoder/Demultiplexer	3.85
74L51	14	Dual 2-Wide 2-In. AND/OR/Invert Gate	.55	74L164	14	8-Bit Serial Shift Register	2.65
74L54	14	4-Wide 2-In. AND/OR/Invert Gate	.55	74L165	16	Parallel Load 8-Bit Serial Shift Register	2.65
74L72	14	JK Master/Slave Flip Flop	.69	74L192	16	BCD Up/Down Counter	1.95
74L73	14	Dual JK Master/Slave Flip Flop	.99	74L193	16	4-Bit Binary Up/Down Counter	1.95
74L74	14	Dual D Flip Flop	.99	74L195	16	4-Bit Parallel-Access Shift Register	1.95
74L75	16	Quad Latch	.79	74L368	16	Tri-State Hex Buffer (80L98)	1.50
74L78	14	Dual JK Flip Flop with Preset	.55				

## 74H00 SERIES

74H00	14	Quad 2-Input NAND Gate	\$ .35	74H53	14	Expandable 4-Wide 2-In. AND/OR/Invert Gate	\$ .39
74H01	14	Quad 2-Input Gate (Open Collector)	.35	74H54	14	4-Wide 2-Input AND/OR/Invert Gate	.39
74H04	14	Hex Inverter	.39	74H55	14	2-Wide 4-Input AND/OR/Invert Gate	.39
74H05	14	Hex Inverter (Open Collector)	.39	74H60	14	Dual 4-Input Expander	.39
74H08	14	Quad 2-Input AND Gate	.39	74H61	14	Triple 3-Input Expander	.39
74H10	14	Triple 3-Input NAND Gate	.39	74H62	14	4-Wide AND/OR Expander	.39
74H11	14	3-Input Positive AND Gate	.39	74H71	14	R-S Flip Flop	.59
74H20	14	Dual 4-Input NAND Gate	.39	74H72	14	JK Master/Slave Flip Flop	.59
74H21	14	Dual 4-Input Positive AND Gate	.39	74H73	14	Dual JK Master/Slave Flip Flop	.59
74H22	14	4-Input Positive NAND Gate	.39	74H74	14	Dual D Flip Flop	.59
74H30	14	8-Input NAND Gate	.39	74H76	16	Dual JK Master/Slave Flip Flop	.59
74H37	14	Quad 2-Input NAND Buffer	.39	74H78	14	Dual JK Flip Flop with Preset	.59
74H38	14	Quad 2-Input NAND Buffer (Open Collector)	.39	74H101	14	JK Neg. Edge Triggered Flip Flop with AND/OR	.69
74H40	14	Dual 4-Input Buffer	.39	74H103	14	Dual JK Negative Edge Triggered Flip Flop	.69
74H50	14	Expand. Dual 2-Wide 2-In. AND/OR/Inv. Gate	.39	74H106	16	Dual JK Negative Edge Triggered Flip Flop	.69
74H51	14	Dual 2-Wide 2-In. AND/OR/Invert Gate	.39	74H108	14	Dual JK Negative Edge Triggered Flip Flop	.69
74H52	14	Expandable 4-Wide AND/OR Gate	.39	74H183	14	Dual Carry-Save Full Adders	1.95

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# 74LS00 SERIES — Low Power Schottky

Part No.	Pins	Function	Price	Part No.	Pins	Function	Price
74LS00	14	Quad 2 NAND Gate	\$.25	74LS160	16	Presetable Decade Counter	\$.69
74LS01	14	Quad 2-Input NAND Gate	.25	74LS161	16	Presetable Binary Counter	.69
74LS02	14	Quad 2 NOR Gate	.25	74LS162	16	Presetable Decade Counter with Clear	.69
74LS03	14	Quad 2 NAND Gate	.25	74LS163	16	Presetable Binary Counter with Clear	.69
74LS04	14	Hex Inverter	.29	74LS164	14	8-Bit Shift Register	.69
74LS05	14	Hex Inverter (Open Collector)	.29	74LS165	16	Parallel Load 8-Bit Serial Shift Register	1.19
74LS08	14	Quad 2-Input AND Gate	.29	74LS166	16	8-Bit Shift Register	1.19
74LS09	14	Quad 2-Input AND Gate (Open Collector)	.29	74LS168	16	Synch. Decade Up/Down Counter (74LS668)	1.19
74LS10	14	Triple 3 NAND Gate	.29	74LS169	16	Synch. Binary Up/Down Counter (74LS669)	1.19
74LS11	14	Triple 3-Input AND Gate	.35	74LS170	16	4x4 Register File	1.49
74LS12	14	3-Input NAND Gate (Open Collector)	.35	74LS173	16	Quad D Register (Tri-State)	.69
74LS13	14	Dual Schmitt Trigger	.39	74LS174	16	Hex D Flip Flop with Clear	.59
74LS14	14	Hex Schmitt Trigger	.59	74LS175	16	Quad D Flip Flop	.59
74LS15	14	Triple 3-Input AND Gate	.35	74LS181	24	Arithmetic Logic Unit	2.49
74LS20	14	Dual 4 NAND Gate	.29	74LS189	16	64-Bit RAM Tri-State	2.95
74LS21	14	Dual 4-Input AND Gate	.29	74LS190	16	Up/Down Decade Counter	.89
74LS22	14	Dual 4-Input NAND Gate (Open Collector)	.29	74LS191	16	Up/Down Binary Counter	.89
74LS26	14	Quad 2-Input Interface Positive NAND Gate	.29	74LS192	16	4-Bit Up/Down BCD Counter	.79
74LS27	14	Triple 3 NOR Gate	.29	74LS193	16	4-Bit Up/Down Binary Counter	.79
74LS28	14	Quad 2-Input Positive NOR Buffer	.35	74LS194	16	4-Bit Bi-Directional Universal Shift Register	.69
74LS30	14	8-Input NAND Gate	.29	74LS195	16	4-Bit Parallel-Access Shift Register	.69
74LS32	14	Quad 2-Input Positive OR Gate	.35	74LS197	14	Preset Binary Counter	.79
74LS33	14	Quad 2-Input NOR Buffer (Open Collector)	.55	74LS221	16	Dual One-Shot	.89
74LS37	14	Quad 2-Input NAND Buffer	.35	74LS240	20	Octal Inverting Bus/Line Driver	1.09
74LS38	14	Quad 2-Input NAND Buffer (Open Collector)	.35	74LS241	20	Octal Bus/Line Driver	1.09
74LS40	14	Dual 4 NAND Buffer	.29	74LS242	14	Quad Bus Transceiver Inverting	1.09
74LS42	16	BCD-to-Decimal Decoder	.55	74LS243	14	Tri-State Quad Transceiver	1.09
74LS47	16	7-Segment Decoder/Driver	.75	74LS244	20	Octal Driver Non-Inverting Tri-State	1.09
74LS48	16	BCD to 7-Segment Decoder/Driver	.75	74LS245	20	Octal Bus Transceiver Non-Inverting	1.49
74LS49	14	BCD to 7-Segment Decoder/Driver	.75	74LS247	16	BCD to 7-Segment Decoder/Driver	1.09
74LS51	14	Dual 2-Input AND/OR Invert Gate	.25	74LS248	16	BCD to 7-Segment Decoder/Driver	1.09
74LS54	14	Quad 2-Input AND/OR Invert Gate	.25	74LS249	16	BCD to 7-Segment Decoder/Driver	1.09
74LS55	14	Dual 4-Input AND/OR Invert Gate	.29	74LS251	16	Tri-State 8-Channel Multiplexer	.59
74LS73	14	Dual JK Flip Flop with Clear	.39	74LS253	16	Dual 4-Input Multiplexer Tri-State	.59
74LS74	14	Dual D Flip Flop	.39	74LS257	16	Quad 2-Input Multiplexer Tri-State	.59
74LS75	16	Quad Latch	.39	74LS258	16	Quad 2/1 Multiplexer	.59
74LS76	16	Dual JK Flip Flop with Preset and Clear	.39	74LS259	16	8-Bit Addressable Latch	1.19
74LS78	14	Dual JK Flip Flop w/Preset Comm. Clk & Clr	.39	74LS260	14	Dual 5-Input NOR Gate	.59
74LS83	16	4-Bit Full Adder	.65	74LS266	14	Quad Ex-NOR Gate (9368)	.69
74LS85	16	4-Bit Magnitude Comparator	.69	74LS273	20	8-Bit D Type Register	1.49
74LS86	14	Quad Exclusive OR Gate 2-Input	.39	74LS279	16	Quad S-R Latches	.49
74LS90	14	Decade Counter	.55	74LS283	16	4-Bit Full Adder	.69
74LS91	14	8-Bit Shift Register	1.49	74LS289	16	64-Bit RAM Open Collector	2.95
74LS92	14	Divide-by-Twelve Counter	.55	74LS290	14	Decade Counter	.89
74LS93	14	4-Bit Binary Counter	.55	74LS293	14	4-Bit Binary Counter	.79
74LS95	14	4-Bit Parallel-Access Shift Register	.79	74LS295	14	4-Bit Right/Left Shift Register w/Tri-State	1.39
74LS96	16	5-Bit Shift Register	.89	74LS298	16	Quad 2-Input Multiplexer with Storage	.89
74LS107	14	Dual JK Master-Slave Flip Flop	.39	74LS352	16	Dual 4-Bit Multiplexer (Inv. Out)	1.29
74LS109	16	Dual JK Positive Edge Flip Flop	.39	74LS353	16	Dual 4-Bit Multiplexer (Inv. Out)	1.29
74LS112	16	Dual JK Negative Edge Flip Flop	.39	74LS364	20	Octal D-Type Transparent Latch	1.95
74LS113	14	Dual JK Negative Edge Flip Flop	.39	74LS365	16	Hex Buffer (Tri-State)	.49
74LS114	14	Dual JK Negative Edge Flip Flop	.39	74LS366	16	Hex Inverter (Tri-State)	.49
74LS122	14	Retriggerable Monostable Multivibrator	.49	74LS367	16	Hex Buffer (Tri-State)	.49
74LS123	16	Monostable Multivibrator with Clear	.79	74LS368	16	Hex Inverter (Tri-State)	.49
74LS125	14	Tri-State Quad Buffer	.49	74LS373	20	Octal Transparent Latch	1.29
74LS126	14	Quad Buffer (Tri-State)	.49	74LS374	20	Octal Dual Flip Flop (Tri-State)	1.29
74LS132	14	Quad Schmitt Trigger	.59	74LS375	16	Quad Latch	.69
74LS133	16	13-Input NAND Gate	.59	74LS377	20	Octal D Register, Common Enable	1.49
74LS136	14	Quad Exclusive OR Gate	.39	74LS378	16	Hex D Register, Common Enable	1.49
74LS138	16	Expandable 3/8 Decoder	.59	74LS379	16	4-Bit Register, Common Enable	1.49
74LS139	16	Expandable Dual 2/4 Decoder	.59	74LS386	14	Quad Ex-OR Gate	.45
74LS148	16	8-Line to 3-Line Priority Encoder	1.95	74LS388	16	Quad D Reg., Std & 3-State Outputs (25LS2518)	3.95
74LS151	16	8-Input Multiplexer	.59	74LS390	16	Dual 4-Bit Binary Counter	1.19
74LS153	16	Dual 4-Input Multiplexer	.59	74LS393	14	Dual 4-Bit Binary Counter	1.19
74LS154	24	Single 4-16 Decoder	.99	74LS399	16	Quad 2-Mux with Q & Q Outputs	1.49
74LS155	16	Dual 2/4 Demultiplexer	.69	74LS670	16	4x4 Register File (Tri-State)	1.49
74LS156	16	Dual 2/4 Demultiplexer (Open Collector)	.69	81LS95	20	Tri-State Octal Buffer	1.49
74LS157	16	Quad 2/1 Multiplexer	.69	81LS97	20	Tri-State Octal Buffer	1.49
74LS158	16	Quad 2/1 Multiplexer (Inv. Out)	.59				

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## NEW PRODUCTS!

## 74HC CMOS

## NEW PRODUCTS!



Part No.	Pins	Function	Price
74HC00	14	Quad 2-Input NAND Gate	\$.75
74HC02	14	Quad 2-Input NOR Gate	.75
74HC04*	14	Hex Inverter	.75
74HC08	14	Quad 2-Input AND Gate	.75
74HC10	14	Triple 3-Input NAND Gate	.75
74HC20	14	Dual 4-Input NAND Gate	.75
74HC27	14	Triple 3 NOR Gate	.75
74HC74	14	Dual D Flip-Flop with Preset and Clear	.99
74HC75	16	Quad Latch	.99
74HC86	14	Quad 2-Input Exclusive-OR Gate	.99
74HC109	16	Dual JK Flip-Flop with Preset and Clear	1.39
74HC138	16	3-to-8 Line Decoder	1.49
74HC139	16	Expandable Dual 2/4 Decoder	1.49
74HC147	16	10/4 Priority Encoder	1.19
74HC151	16	8-Channel Digital Multiplexer	1.19
74HC157	16	Quad 2-Input Multiplexer	1.19
74HC160	16	Synchronous Decade Counter	1.79

\*74HC04 is unbuffered — All others are buffered.

Part No.	Pins	Function	Price
74HC161	16	Synchronous Binary Counter	\$1.79
74HC164	14	8-Bit Serial Shift Register	1.79
74HC174	16	Hex D Flip-Flop with Clear	1.39
74HC175	16	Quad D Type Flip-Flop with Clear	1.39
74HC242	14	Inverting Quad Tri-State Transceiver	2.79
74HC243	14	Quad Tri-State Transceiver	2.79
74HC251	16	Tri-State 8-Channel Multiplexer	1.19
74HC266	14	Quad 2-Input Exclusive-NOR (XNOR) Gate	.99
74HC280	14	9-Bit Odd/Even Parity Generator/Checker	4.95
74HC373	20	Tri-State Octal D Type Latch	3.95
74HC374	20	Tri-State Octal D Type Flip-Flop	3.95
74HC533	20	Tri-State Octal D Type Latch w/Inv. Outputs	3.95
74HC534	20	Tri-St. Octal D Type Flip-Flop (Inv. Outputs)	3.95
74HC4075	14	Triple 3-Input OR Gate	.75
74HC4538	16	Dual Retriggerable Monostable Multivib.	2.95
74HC4543	16	BCD-to-7 Seg. Latch Decoder for LCDs	4.95

These are the first devices released from National and Motorola. We'll be adding new devices all year as they are released.

## WHAT IS THE 74HC CMOS SERIES?

74HC CMOS is a family of High Speed SSI/MSI Logic Components. High speed logic circuits have historically been the domain of bipolar circuits, namely TTL and ECL. However due to improved processing, CMOS technology is now capable of speeds similar to low power Schottky TTL logic, while still retaining the advantages of the CD4000B and MM54C/MM74C series circuits. The MM54HC/MM74HC family characteristics have been standardized to ensure compatibility within the family and ease designing with these devices. The overall family concept has been to provide a series of CMOS circuits which retain the input noise immunity and low power consumption of metal gate CMOS, but offer a **ten fold increase in speed**. The MM54HC/MM74HC series logic is intended to be a "self sufficient" family. That is, an entire set of logic functions are provided such that the designer can develop his system entirely of "HC" components. These devices are **pin out and functionally compatible to LS-TTL circuits**, which enables the TTL designer to easily make the transition to CMOS. In addition, many CD4000B family equivalent devices are provided where no equivalent function exists in TTL. Also some special function circuits are offered to provide functions that neither family implements. Virtually any application that currently uses LS-TTL circuitry can be implemented using 54HC/74HC series circuits, resulting in lower overall system power consumption. In addition to giving the designer the flexibility of designing entire high speed systems in CMOS, "HC" logic also offers increased flexibility by offering circuits that ease interface to other logic families. For example, to simplify TTL interfacing, a group of latches and buffers which have guaranteed input logic levels of 2.0V and 0.8V are provided. They can be directly driven by LS-TTL devices without adding an external pull-up. To interface "HC" logic to 10 or 15 volt CD4000B or MM54C/MM74C series logic, several buffers which have a modified input protection will be available. This enables input signals up to 15V to be down converted to 54HC/74HC logic levels.



## NEW!

## PROGRAMMABLE ARRAY LOGIC (PALs)

## NEW!



Part No.	Pins	Function	Price
PAL10H8	20	Octal 10-Input AND-OR Gate Array (Hi. Outputs)	\$5.95
PAL12H6	20	Hex 12-Input AND-OR Gate Array (Hi. Outputs)	5.95
PAL14H4	20	Quad 14-Input AND-OR Gate Array (Hi. Outputs)	5.95
PAL10H8	20	Octal 10-Input AND-OR-Inv. Gate Arr. (Lo Out.)	5.95
PAL12L6	20	Hex 12-Input AND-OR-Inv. Gate Arr. (Lo Out.)	5.95

Part No.	Pins	Function	Price
PAL14L4	20	Quad 14-Input AND-OR-Invert Gate Array (Low Outputs)	\$5.95
PAL16L8	20	Octal 16-Input AND-OR-Invert Gate Array (Low Outputs)	9.95
PAL16R4	20	Quad 16-Input Registered AND-OR Gate Array	9.95
PAL16R6	20	Hex 16-Input Registered AND-OR Gate Array	9.95
PAL16R8	20	Octal 16-Input Registered AND-OR Gate Array	9.95

**What is a PAL?** A PAL is a user-programmable array of logic gates which allows the equivalent of a number of SSI and MSI (small- and medium-scale integration) packages to be implemented on a single chip. NSC's PAL series are Schottky TTL (transistor-transistor logic) components, and hence offer both speed and easy interfacing. Combinations of registers, flip-flops, and random logic are easily implemented using PALs.

## Why Should You Use a PAL?

**REDUCED BOARD SPACE** — PALs typically implement the equivalent of from 4 to 12 SSI and MSI packages in a single 20-pin DIP. If the amount of space on your PCB is insufficient for your needs, you should seriously consider using PALs in your design.

**COST EFFECTIVENESS** — The total manufacturing cost of a circuit implemented with PALs is frequently less than that of standard ICs. Only 25 to 50 percent of the cost of utilizing an SSI or MSI chip is normally its purchase price; the remaining 50 to 75 percent is tied up in the cost of the PCB area, assembly, and testing associated with that chip. Hence, as the PAL replaces more and more chips, its usage quickly becomes justified on a cost basis alone.

**FAST SYSTEM DESIGN** — Because of PALs' programmability and flexibility, the time needed to design and implement a system can be cut in half.

**EASY DESIGN CHANGES** — PALs offer the designer the ability to reprogram an IC instead of redesigning other hardware and laying out a new PCB when the function of the card changes.

**HIGH SPEED** — PALs are built using Schottky technology. Register PALs clock at 25MHz, with faster parts on the way.

**SMALL INVENTORY** — The PAL family can be used to replace up to 90 percent of TTL components with just 15 different parts.

**What is the Impact of PAL on Logic Design?** Logic designers are noticing an apparent "complexity gap" between TTL and LSI. Products designed using discrete TTL devices would consume unacceptable amounts of physical space and electrical power. Software programmable LSI devices (microprocessors) offer high density and need relatively little power to do almost anything imaginable, but the designer pays a high price in software development and still has to use discrete to interface them to the outside world. Until recently, there has been no device that provides a really effective way of bridging this gap. National Semiconductor Company has seen this need, and now offers the designer a family of PAL (Programmable Array Logic) devices to fill it. Refer to PAL Data Book (30012) for specifications and suggested applications.

30012 1982 National PAL Data Book (176 pages) ..... \$5.95



## DT1050 Digitalker™

Applications: Teaching Aids • Appliances • Clocks • Automotive Telecommunications • Language Translations, etc.

The DT1050 is a standard DIGITALTALKER kit encoded with 137 separate and useful words, 2 tones, and 5 different silence durations. The words and tones have been assigned discrete addresses, making it possible to output single words or words concatenated into phrases or even sentences. The "voice" output of the DT1050 is a highly intelligible male voice. Female and children's voices can be synthesized. The vocabulary is chosen so that it is applicable to many products and markets.

The DT1050 consists of a Speech Professor Chip, MM54104 (40-pin) and two (2) Speech ROMs MM52164SSR1 and MM52164SSR2 (24-pin) along with a Master Word List and a recommended schematic diagram on the application sheet.

DT1050 Digitalker™(3 Chips & Data) ..... \$34.95

## RADIO CONTROL CIRCUITS

## Ideal to use for:

- Toys, hobby crafts, robots, trains
- Burglar alarms
- IR data link
- Remote slide projector control
- Consumer remote data links
- Energy-savings, remotely switched lighting systems



A complete 6-channel digital encoder and RF transmitter; low power, at frequency of 27MHz or 49MHz, a field strength of 10,000uV meter at 3 meters. 9V operation on chip RF oscillator/transmitter, on chip 4.6V regulator. Up to 80MHz carrier frequency operation.

LM1871N RC Encoder/Transmitter Chip ..... \$1.95

A complete RF receiver/decoder, used at either 27MHz, 49MHz or 72MHz. It provides 4 independent channels when used with LM1871 (2 analog, 2 dig.) operates from four 1.5V cells. Crystal controlled.

LM1872N RC Receiver/Decoder Chip ..... \$2.49

SRX1504 49.435MHz Crystal (LM1872N) ..... \$3.95

SRX1505 49.890MHz Crystal (LM1871N) ..... \$3.95



# C/MOS SERIES

Part No.	Pins	Function	Price
CD4000	14	Dual 3-Input NOR Gate plus Inverter	\$ .29
CD4001	14	Quad 2-Input NOR Gate	.29
CD4002	14	Dual 4-Input NOR Gate	.29
CD4006	14	18-Stage Static Shift Register	.89
CD4007	14	Dual Complementary Pair plus Inverter	.29
CD4009	16	Hex/Buffer/Converter (Inverting)	.39
CD4010	16	Hex/Buffer/Converter (Non-Inverting)	.39
CD4011	14	Quad 2-Input NAND Gate	.29
CD4012	14	Dual 4-Input NAND Gate	.15
CD4013	14	Dual D Flip Flop with Set/Reset	.39
CD4014	16	8-Stage Static Shift Register	.79
CD4015	16	Dual 4-Stage Static Shift Register	.39
CD4016	14	Quad Bilateral Switch	.39
CD4017	16	Decade Counter/Divider	.75
CD4018	16	Presetable Divide-by-N Counter	.79
CD4019	16	Quad AND/OR Select Gate	.39
CD4020	16	14-Stage Binary/Ripple Counter	.75
CD4021	16	8-Stage Static Shift Register	.79
CD4022	16	Divide-by-8 Counter/Divider	.79
CD4023	14	Triple 3-Input NAND Gate	.29
CD4024	14	7-Stage Binary Counter	.69
CD4025	14	Triple 3-Input NOR Gate	.23
CD4026	16	Decade Counter/Divider	2.49
CD4027	16	Dual JK Master-Slave Flip Flop	.45
CD4028	16	BCD-to-Decimal Decoder	.69
CD4029	16	Presetable Up/Down Counter	.79
CD4030	14	Quad Exclusive-OR Gate (74C86)	.39
CD4034	24	8-Bit Shift Register (14034)	1.95
CD4035	16	4-Stage Parallel In/Out Shift Register	.89
CD4040	16	12-Stage Binary/Ripple Counter	.79
CD4041	14	Quad True/Complement Buffer	.79
CD4042	16	Quad Clocked D Latch	.69
CD4043	16	Quad NOR R-S Latch	.79
CD4044	16	Quad 3-State NAND R-S Latch	.79
CD4046	16	Micropower Phase-Locked Loop	.89
CD4047	14	Monostable/Astable Multivibrator	.89
CD4048	16	Expandable 8-Input Gate	.39
CD4049	16	Hex/Buffer/Converter (Inverting)	.39
CD4050	16	Hex/Buffer/Converter (Non-Inverting)	.39
CD4051	16	Single 8-Channel Multiplexer	.79
CD4052	16	Differential 4-Channel Multiplexer	.79
CD4053	16	Triple 2-Channel Multiplexer	.79
CD4056	16	BCD to 7-Segment Decoder/Driver	2.95
CD4059	24	Programmable Divide-by-N Counter	7.95
CD4060	16	14-Stage Ripple-Carry Binary	.89
CD4066	14	Quad Bilateral Switch	.39
CD4068	14	8-Input NAND Gate	.39
CD4069	14	Hex Inverter (74C04)	.29

Part No.	Pins	Function	Price
CD4070	14	Quad Exclusive-OR Gate (74C86)	\$ .39
CD4071	14	Quad 2-Input OR Gate	.29
CD4072	14	Dual 4-Input OR Gate	.29
CD4073	14	Triple 3-Input AND Gate	.29
CD4075	14	Triple 3-Input OR Gate	.29
CD4076	16	Quad D Type Register (74C173)	.79
CD4078	14	8-Input NOR Gate	.49
CD4081	14	Quad 2-Input AND Gate	.29
CD4082	14	Dual 4-Input AND Gate	.29
CD4083	14	Quad 2-Input NAND Schmitt Trigger	.49
CD4098	16	COS/MOS Dual Monostable Multivibrator	1.95
CD4502	16	Strobed Hex Inverter/Buffer (14502)	1.95
CD4503	16	Tri-State Hex Buffer (80C97)	.39
CD4506	16	Dual Exp. AND/OR Invert Gate (14506)	1.19
CD4507	14	Quad Exclusive-OR Gate (14507)	.39
CD4508	24	Dual 4-Bit Latch (14508)	3.95
CD4510	16	BCD Up/Down Counter (14510)	.89
CD4511	16	BCD to 7-Seg. Latch/Decoder/Driver (14511)	.89
CD4512	16	8-Channel Data Selector (14512)	.89
CD4514	24	4-Bit Latch 4-16 Line Decoder HI (14514)	1.79
CD4515	24	4-Bit Latch / 4-16 Decoder (14515)	1.79
CD4516	16	Binary Up/Down Counter (14516)	.99
CD4518	16	Dual BCD Up Down Counter (14518)	.99
CD4519	16	4-Bit AND/OR Selector (14519)	.39
CD4520	16	Dual Binary Up Counter (14520)	.79
CD4526	16	Divide-by-N Counter (Binary) (14526)	1.19
CD4528	16	Dual Monostable Multivibrator (14528)	1.19
CD4529	16	Dual 4-Channel Analog Data Selector (14529)	1.19
CD4531	16	12-Bit Parity Tree (14531)	1.79
CD4538	16	Dual Precision Mono. Multivibrator (14538)	1.19
CD4541	14	Oscillator/Programmable Timer (14541)	1.19
CD4543	16	BCD to 7-Segment Decoder (LCD) (14543)	1.19
CD4556	16	Dual Binary 1 of 4 Decoder Inv. (14556)	1.19
CD4562	14	128-Bit Static Register (14562)	6.95
CD4566	16	Industrial Time Base Generator (14566)	1.39
CD4583	16	Dual Schmitt Trigger (14583)	2.49
CD4584	14	Hex Schmitt Trigger (14584/74C14)	.59
CD4585	16	4-Bit Comparator (14585/74C85)	1.95
CD4723	16	Dual 4-Bit Addressable Latch	1.19
CD4724	16	8-Bit Addressable Latch	1.19
CD4725	16	64-Bit Tri-State RAM (74C89)	5.95
MC14409	16	Binary-to-Phone Pulse Converter	13.95
MC14410	16	2-of-8 Tone Encoder	13.95
MC14411	24	Bit Rate Frequency Generator	11.95
MC14412	16	Universal Low-Speed Modem	13.95
MC14419	16	2-of-8 Keypad-to-Binary Encoder	7.95
MC14433	24	3½-Digit A/D Converter	13.95
MC14490	16	Hex Contact Bounce Eliminator	4.95

# 74C00 SERIES

Part No.	Pins	Function	Price
74C00	14	Quad 2-Input NAND Gate	\$ .35
74C02	14	Quad 2-Input NOR Gate	.35
74C04	14	Hex Inverter (4069)	.29
74C08	14	Quad 2-Input AND Gate	.35
74C10	14	Triple 3-Input NAND Gate	.35
74C14	14	Hex Schmitt Trigger (40106) (14584)	.59
74C20	14	Dual 4-Input NAND Gate	.35
74C30	14	8-Input AND Gate	.35
74C32	14	Quad 2-Input OR Gate	.39
74C42	16	BCD-to-Decimal Decoder	1.39
74C48	16	BCD to 7-Segment Decoder/Driver	1.95
74C73	14	Dual JK Flip Flop	.79
74C74	14	Dual D Flip Flop	.69
74C85	16	4-Bit Comparator (14585)	1.95
74C86	14	Quad Exclusive OR Gate (4070)	.39
74C89	16	64-Bit (16x4) RAM (Tri-State) (4725)	5.95
74C90	14	4-Bit Decade Counter	1.19
74C93	14	4-Bit Binary Counter	1.19
74C95	14	4-Bit Shift Register	1.39
74C107	14	Dual JK Data Selector	.89
74C151	16	8-Bit Data Select/Multiplex with Strobe	2.49
74C154	24	4-Line to 16-Line Decoder	3.49
74C157	16	Quad 2-Input Multiplexer	2.25
74C160	16	Synchronous Decade Counter (40160)	1.19
74C161	16	Synchronous Binary Counter (40161)	1.19
74C162	16	Fully Synchronous Decade Counter (40162)	1.19
74C163	16	Fully Synchronous Binary Counter (40163)	1.19
74C164	14	8-Bit Serial-in Para-Out Shift Register	1.49

Part No.	Pins	Function	Price
74C173	16	Tri-State Quad Latch (4076)	\$ .79
74C174	16	Hex Flip Flop (40174)	1.19
74C175	16	Quad D Flip Flop (40175)	1.19
74C192	16	Decade Up/Down Counter (40192)	1.49
74C193	16	Binary Up/Down Counter (40193)	1.69
74C195	16	4-Bit Parallel Access Shift Register (40195)	1.39
74C221	16	Dual Monostable Multivibrator	1.95
74C240	20	Tri-State Octal Buffer (Inverting)	1.95
74C244	20	Tri-State Octal Buffer (Non-Inverting)	1.95
74C373	20	Octal Flow-Thru Latch Tri-State	2.49
74C374	20	Octal D Flip Flop Tri-State (INS82C06)	2.49
74C901	14	Hex Inverting Buffer (TTL Interface)	.59
74C903	14	Hex Inverting Buffer (MOS Interface)	.59
74C906	14	Hex Open Drain N-Channel Buffer	.59
74C911	28	Display Controller (INS8247)	8.95
74C912	28	Display Controller (INS8248)	8.95
74C915	18	7-Segment to BCD Decoder	1.19
74C917	28	Display Controller	8.95
74C920	22	256x4 1K Static RAM	3.95
74C921	18	256x4 1K Static RAM	3.95
74C922	18	16-Key Keyboard Encoder (INS8245)	4.49
74C923	20	20-Key Keyboard Encoder (INS8246)	4.95
74C925	16	4-Digit CTR w/MUX D Segment Driver	5.95
74C926	18	4-Digit CTR w/MUX D Segment Driver	5.95
74C929	16	1024x1 1K Static RAM	3.95
74C930	18	1024x1 1K Static RAM	3.95
80C95	16	Tri-State Hex Buffer	.39
80C97	16	Tri-State Hex Buffer (4503)	.39

**30001 1981 National CMOS/74C ..... \$6.95 ea.**  
**Series Data Book (628 pages)**

**STATIC-INTEGRATED CIRCUIT ACCESSORIES**  
 NCF-1 Conductive Foam (12"x12"x¼") Hard Black ..... 6.95 ea.  
 NCF-2 Conductive Foam (12"x24"x¼") Hard Black ..... 11.95 ea.  
 NCF-3 Conductive Plastic Bags (4"x6") Pink ..... 5/.69¢



# LINEAR VOLTAGE REGULATORS

Part No.	Pins	Function	Price
LM100C	TO-202/4	Positive Adjustable 5V-30V @ 500mA	\$1.75
LM3300H	TO-5/8	Positive Voltage Regulator (2V-20V)	.99
LM3304H	TO-5/10	Negative Voltage Regulator (0-30V)	1.95
LM3305H	TO-5/8	Positive Voltage Regulator (4.5V-40V)	.99
LM3309H	TO-5/3	5-Volt Amp Regulator	1.95
LM3309K	TO-3	5-Volt Amp Regulator	1.25
LM3317K	TO-3	1.5 Amp Adjustable Positive Regulator (1.2V-37V)	3.95
LM3317LZ	TO-92/3	100 mA Adjustable Regulator (1.2V-37V)	.75
LM3317MP	TO-202/3	5 Amp/3 Terminal Adj. Positive Regulator (1.2V-37V)	1.15
LM3317T	TO-220	1.5 Amp/3 Terminal Adj. Positive Regulator (1.2V-37V)	1.19
LM320K-5	TO-3	5-Volt Negative Volt Regulator (7905K)	1.35
LM320K-6	TO-3	6-Volt Negative Volt Regulator (7906K)	1.35
LM320K-8	TO-3	8-Volt Negative Volt Regulator (7908K)	1.35
LM320K-12	TO-3	12-Volt Negative Volt Regulator (7912K)	1.35
LM320K-15	TO-3	15-Volt Negative Volt Regulator (7915K)	1.35
LM320K-18	TO-3	18-Volt Negative Volt Regulator (7918K)	1.35
LM320K-24	TO-3	24-Volt Negative Volt Regulator (7924K)	1.35
LM320T-5	TO-220	5-Volt Negative Volt Regulator (7905)	.89
LM320T-6	TO-220	6-Volt Negative Volt Regulator (7906)	.89
LM320T-8	TO-220	8-Volt Negative Volt Regulator (7908)	.89
LM320T-12	TO-220	12-Volt Negative Volt Regulator (7912)	.89
LM320T-15	TO-220	15-Volt Negative Volt Regulator (7915)	.89
LM320T-18	TO-220	18-Volt Negative Volt Regulator (7918)	.89
LM320T-24	TO-220	24-Volt Negative Volt Regulator (7924)	.89
LM323K	TO-3	5-Volt 3-Amp Regulator	5.95
LM330T-5.0	TO-220	Low In/Output Automotive Regulator	.95
LM337MP	TO-202/3	.5 Amp/3 Terminal Adj. Negative Regulator (1.2V-37V)	1.15
LM337T	TO-220	1.5 Amp/3 Terminal Adj. Negative Regulator (1.2V-37V)	1.95
LM338K	TO-3	5-Amp Adjust. Positive Regulator (1.2V-32V)	6.95

30003 1982 National Linear Data Book (1952 pg.) .....\$11.95

Part No.	Pins	Function	Price
LM340K-5	TO-3	5-Volt Positive Volt Regulator (7805K)	\$1.35
LM340K-6	TO-3	6-Volt Positive Volt Regulator (7806K)	1.35
LM340K-8	TO-3	8-Volt Positive Volt Regulator (7808K)	1.35
LM340K-12	TO-3	12-Volt Positive Volt Regulator (7812K)	1.35
LM340K-15	TO-3	15-Volt Positive Volt Regulator (7815K)	1.35
LM340K-18	TO-3	18-Volt Positive Volt Regulator (7818K)	1.35
LM340K-24	TO-3	24-Volt Positive Volt Regulator (7824K)	1.35
LM340T-5	TO-220	5-Volt Positive Volt Regulator (7805)	.79
LM340T-6	TO-220	6-Volt Positive Volt Regulator (7806)	.79
LM340T-8	TO-220	8-Volt Positive Volt Regulator (7808)	.79
LM340T-12	TO-220	12-Volt Positive Volt Regulator (7812)	.79
LM340T-15	TO-220	15-Volt Positive Volt Regulator (7815)	.79
LM340T-18	TO-220	18-Volt Positive Volt Regulator (7818)	.79
LM340T-24	TO-220	24-Volt Positive Volt Regulator (7824)	.79
LM341P-5	TO-202/3	5-Volt Positive (0.5 Amp) Volt Regulator	.75
LM341P-12	TO-202/3	12-Volt Positive (0.5 Amp) Volt Regulator	.75
LM341P-15	TO-202/3	15-Volt Positive (0.5 Amp) Volt Regulator	.75
LM342P-5	TO-202/3	5-Volt Positive (0.25 Amp) Volt Regulator	.69
LM342P-12	TO-202/3	12-Volt Positive (0.25 Amp) Volt Regulator	.69
LM342P-15	TO-202/3	15-Volt Positive (0.25 Amp) Volt Regulator	.69
LM350K	TO-3	3 Amp/3 Terminal Adj. Positive Regulator (1.2V-33V)	4.95
LM723N	TO-9	Voltage Regulator (2V-37V)	.55
LM723CH	TO-5/10	Voltage Regulator (2V-37V)	1.05
XR1468CN	14	Dual $\pm$ 15V Tracking Volt Regulator	.99
LM1605CK	TO-3/8	5 Amp Hi Eff. Switching Regulator (Adj. 3.0V-30V)	12.95
XR4194N	14	Dual $\pm$ 35V Tracking Volt Regulator	2.95
RC4194TK	TO-66/9	Dual Tracking Voltage Regulator (.05V-32V)	3.95
RC4195TK	TO-66/9	15-Volt Tracking Regulator	3.95
78S40	16	Switching Regulator 1.5 amp (1.3V-40V)	4.95

30011 1980 Linear Applications Handbook (736 pg.) .....\$15.95

## LINEAR INTERFACE

LM1488N	14	Quad Line Driver (75188)	\$ .69
LM1489N	14	Quad Line Receiver (75189)	.69
DS8T26AN	16	Quad Tri-State Bus Transceiver (MC6880/N8T26)	1.19
DS8T28N	16	Quad Tri-State Line Driver (N8T28)	1.19
DS86L531CN	16	Quad Diff. Line Driver	2.25
DS26L532CN	16	Quad Diff. Line Receiver	2.25
DS3603N	14	Dual Tri-State Line Receiver	3.95
DS3654N	16	10-Bit Series Input Power Driver	5.95
DS3679N	16	Hex Tri-State MOS Driver	1.75
DS7521N	16	Core Memory Sense Amp	.99
DS7524N	16	Core Memory Sense Amp	.99
DS7528N	16	Core Memory Sense Amp	.99
DS7534N	16	Core Memory Sense Amp	1.95
DS7535N	16	Core Memory Sense Amp	.99
DS75107N	14	Dual Line Receiver	.89
DS75108N	14	Dual Line Receiver	.89
DS75113N	16	Dual Diff. Line Driver TriState	.99
DS75114N	16	Dual Diff. Line Driver (9614)	.99
DS75121N	16	Dual Line Driver (N8T13)	.99
DS75123N	16	Dual Line Driver (N8T23)	.99
DS75124N	16	Triple Line Receiver (N8T24)	.99
DS75138N	16	Quad-Bus Transceiver	1.95
DS75150N	8	Dual Line Driver	.99
DS75154N	16	Quad Line Receiver (9617)	.99
DS75182N	14	Dual Line Receiver (DS8620N)	1.19
DS75183N	14	Dual Diff. Line Driver (DS8630N)	1.19
DS75188N	14	Quad Line Driver (LM1488N)	.69
DS75189N	14	Quad Line Receiver (LM1489N)	.69
DS75322N	14	Dual TTL to MOS Driver	1.95



DS75324N	14	Dual Memory Driver	\$3.25
DS75325N	16	Dual Memory Driver	1.95
DS75368N	14	Dual MOS Driver	2.95
DS75450N	14	Dual Peripheral Driver	.39
DS75451CN	8	Dual Peripheral Driver	.39
DS75452CN	8	Dual Peripheral Driver	.39
DS75452N-14	14	Dual Peripheral Driver	.35
DS75453CN	8	Dual Peripheral Driver	.35
DS75453N-14	14	Dual Peripheral Driver	.35
DS75454CN	8	Dual Peripheral Driver	.35
DS75454N-14	14	Dual Peripheral Driver	.35
DS75461N	8	Dual Peripheral Driver	.59
DS75462N	8	Dual Peripheral Driver	.59
DS75463N	8	Dual Peripheral Driver	.59
DS75464N	8	Dual Peripheral Driver	.59
DS75491N	14	Quad Segment Driver for LED Readout	.79
DS75492N	14	Hex Digit Driver	.69
DS75493N	16	4-Segment LED Driver	1.25
DS75494N	16	6-Segment LED Driver	1.19
DP8310N	20	Octal Latched Peripheral Driver	4.95
DS8626N	8	120 MHz Divide by 40 Prescaler	4.95
DS8629N	8	120 MHz Divide by 100 Prescaler	4.95
DS8640N	14	Quad 2-Input Receiver/No Hysteresis (SP380A)	.89
DS8641N	16	Quad 2-Input Transceiver/No Hysteresis	1.19
DS8620N	14	Dual Line Receiver (75182)	1.19
DS8621N	14	Dual Diff. Line Driver (75183)	1.19
DS8667N	18	8-Segment LED Anode Driver	1.95
DS8670N	14	6-Digit LED Cathode Driver	1.95



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## EXAR LINEAR

XR205	16	Waveform Generator	\$5.95
XR210	16	FSK Demodulator	3.95
XR215	16	High-Frequency PLL	3.95
XR320	14	Precision Timer	1.19
XR1555	8	Micro-Power 555 Timer	.99
XR1468CN	14	Dual $\pm$ 15V Tracking Regulator	.99
XR2206	16	Monolithic Function Generator	3.95
XR2207	16	Voltage Controlled Oscillator	2.95
XR2208	16	Operational Multiplier	2.49
XR2209	8	Precision Oscillator	2.49
XR2211	14	FSK Demodulator	3.95
XR2212	16	Precision Phase Locked Loop	3.95



XR2216	16	Monolithic Comander	\$2.25
XR2240	16	Programmable Counter/Timer	1.95
XR2242CQP	8	555 Timer with 8-Bit Counter	1.50
XR2264	14	Pulse Proportional Servo	4.25
XR2556	14	Dual Timing Circuit	1.95
XR2567	16	Dual 567 Decoder	1.95
XR3403	14	Quad Op Amp	1.25
XR4194	14	Dual $\pm$ 35V Tracking Voltage Regulator	2.95
XR4202	16	Quad Programmable Op Amp	1.49
XR4212	14	Quad 741	1.19
XR4739	14	Dual Low Noise Op Amp (LM739N)	.99
XR4741	14	Quad Op Amp (LM348N)	1.19



## RCA LINEAR SERIES

CA3010H	TO-5/12	6 Volt Op Amp	\$ .99
CA3013H	TO-5/10	Band Amp Discriminator (MC1355)	2.15
CA3023H	TO-5/12	Low Power Video Amp	3.25
CA3035H	TO-5/10	Wide Band Amp Array	5.95
CA3039H	TO-5/12	Diode Array (UA3039)	1.35
CA3048N	14	Transistor Array (ULN2048)	.89
LM3053H	TO-5/8	Differential RF/IF Amplifier	.89
CA3059N	14	Zero Voltage Switch	3.25
CA3060N	16	Variable Op Amp Array	3.25
CA3065N	14	TV-FM Sound System	1.49
CA3080E	8	Operational Transconductance Amp	.89
CA3080H	TO-5/8	Operational Transconductance Amp	1.25
CA3081N	16	Common Emitter NPN Array (ULN2081)	1.49
CA3082N	16	Common Collector NPN Array (ULN2082)	1.49



CA3083N	16	Transistor Array NPN (ULN2083)	\$1.49
CA3086N	14	Transistor Array NPN (ULN2086)	.69
CA3089N	16	FM/IF System (ULN2289)	1.69
CA3096N	16	NPN/PNP Transistor Array	1.19
CA3130E	8	Super CMOS Op Amp	1.49
CA3130T	TO-5/8	Super CMOS Op Amp	1.95
CA3140E	8	Bi-MOS Op Amp	.99
CA3140T	TO-5/8	Bi-MOS Op Amp	1.49
CA3145E	14	High-Voltage Transistor Array	1.89
CA3160T	TO-5/8	Bi-MOS Op Amp	1.95
CA3189E	16	FM/IF System	1.59
CA3401N	14	Quad Amp (LM3900N)	.59
CA3600N	14	COS/MOS Transistor Array	3.95



— For Dual In-Line Packages, see 7400 page 3 —



# LINEAR

Part No.	Pins	Function	Price
LH0002CN	10	Buffer Amplifier	\$5.95
LM10CLH	TO-5/8	Low Voltage (1.1 volt) Op Amp	3.95
LM11CLH	TO-5/8	Precision DC Op Amp	3.95
LM0070-0H	TO-5/8	Precision BCD Buffered Reference	4.95
TL071CP	8	Low Noise BIFET Op Amp	.79
TL072CP	8	Low Noise BIFET Dual Op Amp	1.39
TL074CN	14	Quad Low Noise BIFET Op Amp (LF347)	1.95
TL081CN	8	JFET-Input Op Amp	.59
TL082CP	8	Gen. Purpose BIFET Dual Op Amp	1.19
TL084CN	14	Gen. Purpose BIFET Quad Op Amp	1.95
LM301CN	8	Improved Op Amp	.35
LM301CH	TO-5/8	Improved Op Amp	.89
LM302CH	TO-5/8	Voltage Follower	1.95
LM307CN	8	Op Amp (Super 741)	.45
LM307CH	TO-5/8	Op Amp (Super 741)	.89
LM308CN	8	Micro Power Op Amp	.69
LM308CH	TO-5/8	Micro Power Op Amp	1.15
LM310CN	8	Improved Op Amp-Volt. Follower	1.75
LM310CH	TO-5/8	Improved Op Amp-Volt. Follower	1.95
LM311CN	8	Hi-Performance Volt. Comparator	.69
LM311CH	TO-5/8	Hi-Performance Volt. Comparator	1.15
LM312CH	TO-5/8	Op Amp	2.49
LM318CN	8	Precision Hi-Speed Op Amp	1.95
LM318CH	TO-5/8	Precision Hi-Speed Op Amp	2.15
LM319N	14	Hi-Speed Dual Comparator	1.95
LM322N	14	Precision Timer	1.65
LM324N	14	Low Power Quad Op Amp (ULN4336)	.59
LM329DZ	TO-92/3	Precision Zener 100PPM/C°6.9V	.65
LM331N	8	Precision Voltage to Frequency Converter	3.95
LM334Z	TO-92/3	Constant Current Source	1.19
LM335Z	TO-92/3	Voltage Mode Temperature Sensor	1.40
LM336Z	TO-92/3	Voltage Reference (2.5V)	1.19
LM339N	14	Quad Comparator	.69
LM348N	14	Quad 741 Op Amp	.99
LF351N	8	BIFET Op Amp (TL081CN)	.60
LF353N	8	Dual BIFET Op Amp (Compat. w/TL082CP)	1.00
LF355N	8	JFET Input Op Amp Low Power	1.10
LF356N	8	JFET General Purpose Input Op Amp	1.10
LM358N	8	Low Power Dual Op Amp	.69
LM359N	14	High Speed Norton Op Amp	1.79
LM370N	14	AGC Squelch Amp	4.49
LM373N	14	AM/FM/SSB Strip	3.95
LM377N	14	Dual 2-Watt Power Amp (ULN2278)	1.95
LM380N	14	2-Watt Audio Power Amp (ULN2280)	.89
LM380CN	8	.6-Watt Audio Amp	1.10
LM381N	14	Low Noise Dual Pre-Amp (112dB)	1.79
LM382N	14	Low Noise Dual Pre-Amp (110dB)	1.39
LM384N	14	5-Watt Audio Amp (ULN2281)	1.79
LM386N-3	8	Low Voltage Audio Amp .500W/9V	.89
LM387N	8	Low Noise Dual Pre-Amp	.89
LM389N	18	Low Voltage Audio Amp w/XTRS	1.19
LM392N	8	Op Amp and Comparator	.69
LF398N	8	Sample and Hold Amplifier	3.95
LM399H	TO-5/4	Temp. Compensated Prec. Ref. (.5ppm/C°)	5.00
TL494CN	16	Switching Reg. (Pulse Width Modulated)	2.95
TL496CP	8	Single Switching Regulator	1.19
NE510A	14	Dual Differential Amp	4.95
NE529A	14	Analog Voltage Comparator (LM361)	2.95
NE531H	TO-5/8	Op Amp (RC4531)	4.95
NE531V	8	Op Amp	2.95
NE536H	TO-5/8	FET Input Op Amp (UA740)	8.95
NE540H	TO-5/10	Power Driver	4.95
NE544N	14	Servo Amp	2.95
NE550A	14	Voltage Regulator	1.95
NE555V	8	Timer (MC1455P)	.35
XR-L555	8	Low Power 555 Timer	.99
LM556N	14	Dual 555 Timer	.69
NE564N	16	Digital Phase Locked Loop	2.95
LM565N	14	Phased Locked Loop	1.19
LM565CH	TO-5/10	Phased Locked Loop	1.95
LM566CN	8	Function Generator	1.49
LM567V	8	Tone Decoder Phased Locked Loop	.89

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(1952 pages)

Part No.	Pins	Function	Price
LM567CH	TO-5/8	Tone Decoder Phased Locked Loop	\$1.50
NE570N	16	Compander	3.95
NE571N	16	Compander	2.95
LM709N	14	Op Amp	.49
LM709CH	TO-5/8	Op Amp	.99
LM710N	14	Voltage Comparator	.69
LM710CH	TO-5/8	Voltage Comparator	.99
LM711N	14	Dual Difference Comparator	.79
LM711CH	TO-5/10	Dual Difference Comparator	1.25
LM725CN	8	Instrumentation Op Amp	2.95
LM733N	14	Video Amp	1.00
LM733CH	TO-5/10	Video Amp	1.29
LM739N	14	Dual Hi-Performance Op Amp (UA4739)	1.95
LM741CN	8	Compensated Op Amp (ULN2151)	.35
LM741CH	TO-5/8	Compensated Op Amp	.89
LM741-14N	14	Compensated Op Amp	.49
MC1741SCG	TO-5/8	High Slew Op Amp	2.95
LM747N	14	Dual 741 Op Amp	.69
LM747CH	TO-5/10	Dual 741 Op Amp	.99
LM748N	8	Frequency Adjusted 741	.59
LM748CH	TO-5/8	Frequency Adjusted 741	.99
LM1014N	10	Motor Speed Control	1.19
LM1303N	14	Stereo Pre-Amp	1.95
LM1304N	14	FM Multiplex Stereo Demodulator	1.19
LM1305N	14	FM Multiplex Stereo Demodulator	1.19
LM1307N	14	FM Multiplex Stereo Demodulator	.79
LM1310N	14	Stereo Demodulator (ULN2110)	1.49
MC1330A1	8	Low Level Video Detector	1.95
MC1349	8	Video IF Amp (15V)	1.79
MC1350	8	Video IF Amp (12V)	1.49
MC1358	14	TV Sound IF Amp	1.95
LM1458CN	8	Dual Comp. Op Amp (MC5558V/RC4558)	.59
LM1458CH	TO-5/8	Dual Comp. Op Amp (MC5558H/RC4558T)	.89
LM1458-14N	14	Dual Comp. Op Amp	.69
LM1488N	14	Quad Line Driver (75188)	.69
LM1489N	14	Quad Line Receiver (75189)	.69
LM1496N	14	Balanced Mod/Demodulator	1.95
LM1556V	8	Op Amp Hi-Performance (N5556)	1.75
LM1800N	16	PLL Stereo Decoder (UA758/ULN2244)	1.49
LM1818N	14	Elec. Switched Cassette I.C.	1.95
LM1871N	18	Radio Control Encoder/Transmitter	1.95
LM1872N	18	Radio Control Receiver/Decoder	2.49
LM1877N-9	14	Dual Power Audio Amp	1.95
LM1889N	18	Video Modulator	1.95
LM1896N	14	Low Voltage Dual Audio Amp	2.95
LM2002T	TO-220/5	8-Watt Audio Power Amp	1.49
ULN2003A	16	Hi Volt. Hi Curr. Darlington Transistor Array	.69
LM2111N	14	FM Detector and Limiter	.99
LM2877P	P11A	Dual Power Audio Amp	1.95
LM2878P	P11A	Dual 6-Watt Audio Amp (SIP)	2.25
LM2896P-1	P11A	Low Voltage Audio Amp (SIP)	1.59
LM2901N	14	Quad Comparator (Low Power)	.59
LM2902N	14	Quad Op Amp (Low Power)	.89
LM2907N	14	Frequency to Voltage Converter	2.49
CA3000	—	RCA 3000 Series — See Preceding Page	
MC3310P	8	FM-IF Wide Band Amp	.79
LM3900N	14	Quad Amp (CA3401)	.59
LM3905CN	8	Precision Timer	1.19
LM3909N	8	LED Flasher	.99
LM3914N	18	Bar-Graph Display Driver	3.49
LM3915N	18	3 DB Steps Bar-Graph Display Driver	3.49
LM3916N	18	VU Meter Display Driver	3.49
RC4136N	14	Quad Op Amp	1.25
RC4151NB	8	Voltage to Frequency Converter	1.95
LM4250CN	8	Programmable Op Amp	1.29
LM4500A	16	Hi-Fi FM Stereo Blend Demodulator	1.95
7800 Series	—	Voltage Reg. (T&K Pack.) — See Preceding Page	
7900 Series	—	Voltage Reg. (T&K Pack.) — See Preceding Page	
8038CCPD	14	Precision Wave Form Generator	3.95
LM13080N	8	Programmable Power Op Amp	1.19
LM13600N	16	Dual Transconductance Amp	1.19
76477	28	Programmable Sound Generator	3.95

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Application Handbook (736 pages)



# MICROPROCESSOR COMPONENTS

Part No.	Pins	MICROPROCESSOR CHIPS	Price
CDP1802	40	CPU (2.5MHz)	\$9.95
M-CDP1802	—	User Manual for CDP1802	7.50
2650	40	MPU (2MHz)	14.95
M-2650	—	User Manual for 2650	5.00
IDM2901ADC	40	CPU — 4-Bit Slice	19.95
MC56502	40	MPU with Clock (65K Bytes Memory) 4MHz	9.95
MC6802CP	40	MPU with Clock and RAM	7.95
INS8035N-6	40	MPU — 8-Bit (6MHz)	5.95
INS8039N-6	40	CPU — Single Chip 8-Bit (128 Bytes RAM)	5.95
INS8040N-6	40	CPU — 8-Bit (256 Bytes RAM) 6MHz	5.95
INS8070N	40	CPU — 64 Bytes RAM	11.95
INS8073N	40	CPU — with Basic Micro Interpreter	14.95
P8085A	40	CPU (3MHz)	5.95

## Z80, Z80A, Z80B, Z8000 Series

Z80	40	CPU (MK3880N)(780C) 2MHz	4.95
M-Z80	—	User Manual for Z80, Z80A	7.50
Z80-CTC	28	Counter Timer Circuit	5.95
Z80-DART	40	Dual Asynchronous Receiver/Transmitter	11.95
Z80-DMA	40	Direct Memory Access Circuit	15.95
Z80-PIO	40	Parallel I/O Interface Controller	5.95
Z80-SIO/0	40	Serial I/O (TXCB & RXCB Bonded)	15.95
Z80-SIO/1	40	Serial Input/Output (Lacks DTRB)	15.95
Z80-SIO/2	40	Serial Input/Output (Lacks SYNCB)	15.95
Z80-SIO/9	40	Serial Input/Output	15.95
Z80A	40	CPU (MK3880N-4)(780C-1) 4MHz	5.95
Z80A-CTC	28	Counter Timer Circuit	5.95
Z80A-DART	40	Dual Asynchronous Receiver/Transmitter	11.95
Z80A-DMA	40	Direct Memory Access Circuit	17.95
Z80A-PIO	40	Parallel I/O Interface Controller	5.95
Z80A-SIO/0	40	Serial I/O (TXCB & RXCB are Bonded)	16.95
Z80A-SIO/1	40	Serial I/O (Lacks DTRB)	16.95
Z80A-SIO/2	40	Serial I/O (Lacks SYNCB)	16.95
Z80A-SIO/9	40	Serial Input/Output	16.95
Z80B	40	CPU (MK3880N-6) 6MHz	11.95
Z80B-CTC	28	Counter Timer Circuit	13.95
Z80B-PIO	40	Parallel I/O Interface Controller	13.95
Z8001	48	CPU Segmented	51.95
Z8002	40	CPU Non-Segmented	55.95
Z8030	40	Serial Communications Controller	44.95
Z8036	40	Counter/Timer and Parallel I/O Unit	29.95

## 6800/68000 SERIES

MC6800	40	MPU (1MHz)	4.95
MC6810API	24	128x8 Static RAM	3.95
MC6821	40	Peripheral Inter. Adapt (MC6820)	4.95
MC6828	24	Priority Interrupt Controller	15.95
MC6830L8	24	1024x8-Bit ROM Mik/Min Bug Program	10.95
MC6850	24	Asynchronous Comm. Adapter	4.95
MC6852	24	Synchronous Serial Data Adapter	5.75
MC6860	24	0-600 bps Digital MODEM	9.95
MC6862	24	2400 bps Modulator	12.95
MC6880A	16	Quad 3-State Bus Trans. (N8T26)	2.25
MC68000L8	64	MPU 16-Bit (8MHz)	69.95
MC68488P	40	General Purpose Interface Adapter	8.95
MC68652P2	40	Multi-Protocol Comm. Cont. 2MHz(2652)	24.95
MC68661PB	28	Enhanced Prog. Comm. Interface (2661-2)	8.95

## 8080A SERIES

INS8080A	40	CPU (2MHz)	3.95
TMS5501	40	Synchronous Data Interface (SIRC)	14.95
INS8154	40	128-Byte RAM 16-Bit I/O	13.95
INS82C06	20	Octal D Flip Flop Tri-State (74C374)	2.49
DP8212	24	8-Bit Input/Output (74S412)	2.25
DP8214	24	Priority Interrupt Control	3.95
DP8216	16	Bi-Directional Bus Driver	2.25
DP8224	16	Clock Generator/Driver	2.25
DP8226	16	Bus Driver	2.25
DP8228	28	System Controller/Bus Driver (74S428)	3.49
DP8238	28	System Controller (74S438)	4.49
INS8243	24	I/O Expander for 48 Series	5.95
INS8245	16	16-Key Keyboard Encoder (74C922)	4.49
INS8246	20	20-Key Keyboard Encoder (74C923)	4.95
INS8247	28	Display Controller (74C911)	8.95
INS8248	28	Display Controller (74C912)	8.95
INS8250N	40	Asynchronous Comm. Element (INS8250)	10.95
INS8251	28	Prog. Comm. I/O (USART)	4.49
INS8253	24	Prog. Interval Timer	6.95
INS8255	40	Prog. Peripheral I/O (PPI)	4.49
INS8257	40	Prog. DMA Control	7.95
INS8259	28	Prog. Interrupt Control	6.95
INS8275	40	Prog. CRT Controller	29.95
INS8279	40	Prog. Keyboard/Display Interface	8.95
DP8303	20	8-Bit Tri-State Bi-Directional Transceiver	3.95
DP8304	20	8-Bit Bi-Directional Receiver	2.49
DP8307	20	8-Bit Bi-Directional Receiver	2.49
DP8308	20	8-Bit Bi-Directional Receiver	2.49
DP8310	20	Octal Latched Peripheral Driver	4.95
DP8311	20	Octal Latched Peripheral Driver	4.95

## UART'S

Part No.	Pins	Function	Price
AY-5-1013A	40	30K BAUD (TR1602) (COM-2502) (S1883)	\$4.95

## DATA ACQUISITION

TRANSDUCERS			
LM334Z	TO-92/3	Constant Current Source	\$1.19
LM335Z	TO-92/3	Temperature Transducer	1.40

## AMPLIFIERS

LM308AH	TO-5/8	Super Gain Op Amp	1.15
LF356N	8	JFET Input Op Amp	1.10

## FILTER

MF10CN	20	General Purpose Active Filter	4.95
AF100-1CN	16	Universal Active Filter 2.5%	5.95
AF121-1CJ	24	Touch Tone Low Band Filter	19.95
AF122-1CJ	24	Touch Tone High Band Filter	19.95

## MULTIPLEXER

CD4051N	16	8-Channel Multiplexer	.79
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## SAMPLE & HOLD

LF398N	8	Sample & Hold Amplifiers	3.95
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## REFERENCE

LM399H	TO-5/4	Temp. Compensated Prec. Ref. (.5PPM/C°)	5.00
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## ANALOG TO DIGITAL CONVERTERS

LD110/111	16	3½ Digit A/D Converter Set	14.95/set
ADC0804LCN	20	8-Bit A/D Converter (1 LSB)	3.49
ADC0809CCN	28	8-Bit A/D Converter (8-Channel MPX)	4.49
ADC0817CCN	40	8-Bit A/D Converter (16-Ch. MPX) (74C948-1)	9.95

## DIGITAL TO ANALOG CONVERTERS

DAC0806LCN	16	8-Bit D/A Converter (0.78% Lin.) (MC1408P6)	1.95
DAC1000LCN	24	10-Bit D/A Conv. Micro. Comp. (.05%)	13.95
DAC1008LCN	20	10-Bit D/A Conv. Micro. Comp. (.20%)	7.95
DAC1020LCN	16	10-Bit D/A Converter (0.05% Lin.)	8.49
DAC1022LCN	16	10-Bit D/A Converter (0.20% Lin.)	5.95
DAC1222LCN	18	12-Bit D/A Converter (0.20% Lin.)	6.95
MC1408L7	16	7-Bit D/A Converter (DAC0807LCN)	2.49
MC1408L8	16	8-Bit D/A Converter (DAC0808LCN)	2.95

## SPECIAL FUNCTION

DS0025CN	8	Dual MOS Clock Driver (5MHz) 30V Output	\$2.49
DS0026CN	8	Dual MOS Clock Driver (5MHz) 20V Output	1.95
COP402N	40	Microcont. w/64-dig. Ram & Dir. LED Drive	5.95
COP402MN	40	Microcont. w/64-dig. Ram & Dir. LED Drive with N Buss. Int.	5.95
COP470N	20	32-Seg. VAC Fluorescent Driver	3.25
INS1771N-1	40	Floppy Disc Controller	16.95
INS2651N	28	Communication Chip	8.95
IDM2909AJC	28	Microprog. Sequencer (Comm. Temp.)	7.95
MC3470P	18	Floppy Disk Read Amp System	4.95
MM54240N	24	Asynchronous Transmitter/Receiver	5.95
MM58167N	24	Microprocessor Real Time Clock	8.95
MM58174N	16	Microprocessor Compatible Clock	7.95

## TELEPHONE/KEYBOARD CHIPS

74C922	18	Keyboard Encoder (16 Keys) (INS8245N)	4.49
74C923	20	Keyboard Encoder (20 Keys) (INS8246N)	4.95
HD0165-5	24	Keyboard Encoder (16 Keys)	9.95
AY-5-2376	40	Keyboard Encoder (88 Keys) (KR2376)	9.95
AY-5-9100	18	Push Button Telephone Dialer	14.95
AY-5-9200	16	Repertory Dialer	14.95
AY-5-9500	14	CMOS Clock Generator	4.95
MM53130N	18	Touch Tone Dialer	5.95
MM53190N	20	Push Button Pulse Dialer	4.49

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**010400 1982 Intel Component Data Book (1405 pages) ... \$14.95**



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## CALCULATOR CHIPS

Part No.	Pins	Function	Price
TMS0128NC	28	4-Bit Microcomputer Calculator Chip	\$2.49
MM5725	28	8-Digit 4 Function	2.95
MM57459	24	8-Digit LED Direct-Drive Memory Calculator	6.95

## CLOCK CHIPS

MM5309	28	6-Digit with Reset	\$3.95
MM5311	28	6-Digit with BCD	3.95
MM5312	24	4-Digit Any Readout	3.95
MM5314	24	6-Digit LED/Incandescent Readout	3.95
MM5316	40	Alarm Set/Snooze Alarm Timer	4.95
MM5318	28	Clock/TV Character Generator	7.95
MM5369	8	Programmable Oscillator/Divider	1.19
MM5378	18	Digital Auto Clock — VF	3.95
MM5387	40	4-Dig. Alarm Clock—Dir. LED Drive (1998/3817)	3.95
MM5402	40	Digital Alarm Clock — LED	5.95
MK50250	28	4/6 Digit Alarm with Snooze & AM/PM	6.95
MM53124	40	Digital Auto Clock — VF	7.95
MM58167A	24	Microprocessor Real Time Clock	8.95
MM58174A	16	Microprocessor Compatible	7.95

## DISPLAY DRIVERS

DS3654N	16	10-Bit Series Input Power Driver	\$5.95
LM3914N	18	Bar-Graph Display Driver	3.49
LM3915N	18	3 DB Steps Bar-Graph Display Driver	3.49
LM3916N	18	VU Meter Display Driver	3.49
MM5445N	40	33-Segment VF Display Driver	4.95
MM5450N	40	34-Segment LED Display Driver	3.95
MM5452N	40	32-Segment LCD Display Driver	4.95
DS8654	18	8-Output Display Driver	3.49
DS8664	24	14-Digit Decoder/Driver	5.95
DS8665	24	14-Digit Decoder/Driver (High Drive)	4.95
DS8666	24	14-Digit Decoder/Driver (POS Systems)	4.95
DS8692	22	8-Output, 350mA, Transistor Array	3.95
DS8856	16	BCD-to-7-Seg. LED Driver Common Anode	2.95
DS8859	16	Serial Input Hex Latch LED Driver (High Level)	1.59
DS8861	16	MOS, LED 5-Segment Driver	1.95
DS8863	16	MOS, LED 8-Digit Driver	3.95
DM8864	22	9-Digit LED Driver, Common Cathode	2.00
DM8865	18	8-Digit LED Driver, Common Cathode	1.00
DS8867	18	8-Segment LED Constant Current Driver	1.95
DS8868	18	12-Digit LED Decoder/Driver	3.95
DS8869	16	Serial Input Hex Latch LED Driver (Low Level)	1.90
DS8870	14	Hex LED Digit Driver (Cathode)	1.95
DS8871	18	8-Digit LED Driver (Cathode)	1.95
DS8872	22	9-Digit LED Driver (Cathode)	1.95
DS8873	22	9-Digit LED Driver, Low Batt. Ind. (Cathode)	2.49
DS8874	14	9-Digit Shift Input LED Driver (Cathode)	2.49
DS8877	14	6-Digit LED Driver (Cathode)	1.25
DS8887	18	8-Digit High Voltage Anode Driver	1.95
DS8889	18	8-Segment High Voltage Cathode Driver	1.95
DS8895	16	Quad LED Segment Driver	1.49
DS8963	18	18V DS8863	3.95
DS8973	22	9-Digit LED Driver, 5.5V, V <sub>CC</sub>	2.49
DS8975	22	9-Digit LED Driver w/Low Battery Indicator	2.49
F9368	16	FND 70 Driver/Latch	3.95
F9374	16	7-Seg. LED Driver for C.A. LEDs	1.50
DS75491	14	Quad Segment Driver	.79
DS75492	14	Hex Digit Driver	.69
DS75493	16	Programmable Quad Segment Driver	1.25
DS75494	16	Saturating Hex Digit Driver	1.19

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Includes all the above DS/DM 8000 Series

## RADIO, TV, & MISCELLANEOUS CIRCUITS

Part No.	Pins	Function	Price
LT1C90	16	Divide 10/11 Prescaler (Plessey #SP8660)	\$14.95
95H90	16	Hi-Speed Divide 10/11 Prescaler	9.95
1173AN-1	28	30 Tone Musical MPU (MOS) w/Specs.	6.95
LM1871N	18	Radio Control Encoder/Transmitter Chip	1.95
LM1872N	18	Radio Control Receiver/Decoder Chip	2.49
MM5322N	16	TV Test Color Bar Generator	14.95
MM5330N	16	4 1/2-Digit DPM Logic Block	3.95
MM5402N	40	Digital Alarm Clock (works w/MM5430)	5.95
MM5430N	40	AM/FM Radio Frequency Display	5.95
MM5837N	8	Digital Noise Source	2.49
MK50240N	16	Top Octave Frequency Generator	9.95
MM53200N	18	Digital Code Trans/Rec. (Garage Door Type)	3.95
MM55110N	24	Ph. Lock Lp. Freq. Syn. (w/Rec/Trans. Mode)	5.95
MM55121N	16	Ph. Lock Lp. Freq. Syn. (Serial Data)	5.95
76477	28	Programmable Sound Generator	3.95
AY-3-8500-1	28	TV Game Chip & Crystal (2.01MHz)	7.95

**30010** 1980 National Audio/Radio Handbook (240 pg.) . . . . . \$5.95

# INTERMIL

\*Intermil's  
Evaluation Kits

Part No.	Pins	Function	Price
70451PI	28	CMOS Precision Timer	\$14.95
7045EV/Kit*	28	Stopwatch Chip, XTL & Data Sheet	19.95
7106CPL	40	3 1/2-Digit A/D (LCD Drive) Converter	9.95
7106EV/Kit*	40	IC, Cir. Brd., Display & Comp. (LCD)	34.95
7107CPL	40	3 1/2-Digit A/D (LED Drive) Converter	11.95
7107EV/Kit*	40	IC, Cir. Brd., Display & Comp. (LED)	29.95
7116CPL	40	3 1/2-Digit A/D LCD Converter w/Display HLD.	16.95
7117CPL	40	3 1/2-Digit A/D LED Converter w/Display HLD.	15.95
7201IUS	TO-72/4	Low Battery Vol Indicator	2.25
72051PG	24	CMOS LED Stopwatch/Timer	12.95
7205EV/Kit*	24	Stopwatch Chip, XTL & Data Sheet	14.95
7206CJPE	16	Tone Generator	4.95
7206EV/Kit*	16	Tone Generator Chip, XTL & Data Sheet	7.95
7207AIPD	14	Oscillator Controller	5.95
7207AEV/Kit*	14	Freq. Controller Chip, XTL & Data Sheet	7.95
72081PI	28	CMOS 7 Decade Counter	15.95
72091PA	8	Clock Generator	3.95
72151PG	4	4 Function CMOS Stopwatch CKT (LED)	13.95
7215EV/Kit*	24	4 Func. Stopwatch Chip, XTL & Data Sheet	14.95
7216AIJL	28	8-Digit Univ. Counter Common Anode	29.95
7216CIJL	28	8-Digit Freq. Counter Common Anode	24.95
7216DIPI	28	8-Digit Freq. Counter Common Cathode	19.95
7217IJI	28	4-Digit LED Up/Down Counter C.A.	10.95
7217AIPI	28	4-Digit LED Up/Down Counter C.C.	11.95
7218CIJL	28	8-Digit Univ. LED Drive C.A.	10.95
7224IPL	40	LCD 4 1/2-Digit Up Counter DRI	10.95
7226AIJL	40	8-Digit Univ. Counter C.A.	29.95
7226AEV/Kit*	40	5 Func. Counter Chip, XTL & Comp.	74.95
7240IJE	16	CMOS Bin Prog. Timer/Counter	4.95
7242IJA	8	CMOS Divide-by-256 RC Timer	2.25
7250IJE	16	CMOS BCD Prog. Timer/Counter	6.00
7260IJE	16	CMOS BCD Prog. Timer/Counter	5.25
75551PA	8	CMOS 555 Timer	1.45
75561PD	14	CMOS 556 Timer	2.20
7611BCPA	8	CMOS Op Amp Comparator	5MV 2.25
7612BCPA	8	CMOS Op Amp (Ext. Common Mode)	5MV 2.95
7613BCPA	8	CMOS Dual Op Amp Comp.	5MV 3.95
7631CCPE	16	CMOS Tri Op Amp Comp.	10MV 5.35
7641CCPD	14	CMOS Quad Op Amp Comp.	10MV 7.50
7642CCPD	14	CMOS Quad Op Amp Comp.	10MV 7.50
7680CPA	8	Voltage Converter (+5 to ±5V)	2.95
8038CCPD	14	Waveform Generator	3.95
8048CCPE	16	Monolithic Log Amp	16.95
8069CCQ	TO-52/2	50ppm Band-GAPV. Ref. Diode (w/7107CPL)	2.50
8211CPA	8	Volt Ref/Indicator (Programmable)	2.95
8212CPA	8	Volt Ref/Indicator (Programmable)	2.95

**30009** 1982-83 Intersil Data Book (1356 pages) . . . . . \$9.95

## MOTOROLA

MC1330A1	8	Low Level Video Detector	\$1.95
MC1349P	8	Video IF Amp (15V operation)	1.79
MC1350P	8	Video IF Amp (12V operation)	1.49
MC1358P	14	TV Sound IF Amp	1.95
MC1408L7	16	8-Bit D to A Converter (DAC0807LCN)	2.49
MC1408L8	16	8-Bit D to A Converter (DAC0808LCN)	2.95
MC1439L	14	Linear Op Amp (ULN2139)	2.95
MC1801P	14	Dual 5-1 NAND Gate	.79
MC1808P	14	Quad 2-Input OR Gate	.79
MC1810P	14	Quad 2-Input NOR Gate	.79
MC1818P	14	Quad 2-Input NAND Gate (Open Collector)	.79
MC3022P	14	Quad Exclusive NOR Gate	2.95
MC3061P	14	Dual JK Flip Flop (74S114)	1.95
MC3310P	8	FM-IF Wide Band Amp	.79
MC3340P	8	Electronic Attenuator	.89
MC3420P	16	Switching Regulator Control Circuit	1.75
MC3441AP	14	Quad Gen. Purp. Interface Bus Transceiver	2.95
MC3470P	18	Floppy Disc Read Amp System	4.95
MC4024P	14	Dual Voltage Control Multivibrator (11C24)	3.95
MC4044P	14	Frequency Phase Detector (11C44)	4.50
MC14433P	24	3 1/2-Digit A to D Converter	13.95
SC42549P	14	CMOS Smoke Detector Chip	.69
MCM66710P	24	128x9x7 ASCII Shifted w/GrEEK (MC6571)	13.50
MCM66740P	24	128x9x7 Math Symbols & Pictures (MC6574)	13.50
MCM66750P	24	128x9x7 Alpha Control Char. Gen. (MC6575)	13.50

## 6800/68000 — SUPPORT DEVICES

MC6800	40	MPU (1MHz)	4.95
MC6810API	24	128x8 Static RAM	3.95
MC6821	40	Peripheral Inter. Adapt (MC6820)	4.95
MC6828	24	Priority Interrupt Controller	15.95
MC6830L8	24	1024x8-Bit ROM Mik/Min Bug Program	10.95
MC68000L8	64	MPU 16-Bit (8MHz)	69.95
MC68488P	40	General Purpose Interface Adapter	8.95
MC68652P2	40	Multi-Protocol Comm. Cont. 2MHz(2652)	24.95
MC68661PB	28	Enhanced Prog. Comm. Interface (2661-2)	8.95



# RAMS, PROMS and EPROMS CROSS-REFERENCE GUIDE

	National Semiconductor	Access Time NS	Pins	Org.	AMD	FSC	FUJ	(CMOS) HAR	HIT	INT	MOSTEK	MOT	MMI	NEC	SIG	SYN	TI	TOSH	(CMOS) INTERSIL
STATIC RAMS	MM1101N	1000	16	256x1	1101A					1101A	MK4007				2501				7501
	MM2101A	350	22	256x4	2101A	933A		HM6501		P2101A				UPD2101A	2101A	SV2101			7101
	MM2101A-2	250	22	256x4	2101-1					P2101A-2				UPD2101A-2	2101A-2				
	MM2101A-4	450	22	256x4	2101-2	933A-1	MB8101			P2101A-4				UPD2101A-4	2101A-4				
	MM2102AN	350	16	1024x1	9102C-PC	2102				P2102A				UPD2102A	2102	SY2102A			
	MM2102AN-2	250	16	1024x1	9102DPC	2102HPC				P2102A-2					21F02-2				
	MM2102AN-4	450	16	1024x1	9102BPC	2102LPC				P2102A-4	MK4102			UPD2102	21F02-4		TMS4033	TM313	TM7552
	MM2102AN-L	350	16	1024x1	91L02CPC	2102LPC				P2102AL					21I02				
	MM2102AN-2L	250	16	1024x1	91L02APC	2102-1				P2102AL-2									
	MM2102AN-4L	450	16	1024x1	91L02LPC	2102LPC				P2102AL-4									
	MM2111N	450	18	256x4	9111		MB8111			P2111A-4		MB811		UPD2111A	2111	SV2111	TMS4042-2	TM311	7111
	MM2112N	450	16	256x4	9112					P2112A-4					21I12	SV2112	TMS4043-2	TM312	
	MM2114N	450	18	1024x4	9114BPC	2114		HM6514	HM672114A-4	P2114	MK4114-5	MCM2114P45		UPD2114	SV2114	TMS4045-45	TM314A	IM7114	
	MM2114N-2	250	18	1024x4	9114EPC	2114-2	MB8114E		HM672114A-2	P2114-2	MK4114-5	MCM2114P20		21I14-2	SV2114-2	TMS4045-20	TM314A-1	IM7114	
	MM2114N-4	450	18	1024x4	91L14BPC	2114L			HM672114A-4	P2114L	MK4114-5	MCM2114L45		UPD2114L	SV2114L	TMS4045-45	IM7114L		
	MM2114N-2L	200	18	1024x4	91L14EPC	2114L-2	MB8114EL			P2114AL-4		MCM2114P20		UPD2114L-3	SV2114L-2	TMS4045-20	TM314A-1	IM7114L	
	MM2141N-3	150	18	4096x1						P2141-3									
	MM2147N	70	18	4096x1	9147-70		MBM2147E		HM4847	P2147H	MK2147N-70	M2147P70		UPD2147D2	SV2147	TMS2147-7	TM315D	2147	
	NMC2148N	70	18	1024x4	9148-70					P2148H					SV2148				
	NMC257N	450	18	4096x1	4044-45		MBM4044			P2141		M2141P45		UPD4104	2613-45		TMS4044-45N		TM7141
	HM6116P-3	150	24	256x8					HM6116P-3										
	NMC215-4	200	24	256x8			MB9416N			HM6116P-4									
	SN7489N	60	16	15x4	3101	7489				P3101		MA064	R550	UPB2069	74S89		7489		TC516
	MM74C620	250	22	256x4	5101			HM6511B	HM435101	P5101L		M145101		UPD5101				TC5101	655101P
	MM74C621	250	16	256x4															
	MM74C929	250	18	1024x1			MB8401	HM6509-9											
	MM74C930	250	18	1024x1			MB8411	HM6518-5											
	DM74S189N	35	16	16x4	27503	93405			74S189										
	DM74S200N	80	16	256x1	27500	93421				P3106		MC4064		UPB2202	82S16				
	DM74S206N	60	16	256x1	27501	93411				P3106-8				UPB2206	82S17				
	DM74S289N	35	16	16x4	27502	93404			74S289	3101A				UPB2289	82S25				
DYNAMIC RAMS	MM5270N	250	18	4096x1	9050														
	MM5261N	300	18	1024x1		F1103				P1104									
	MM5262N	200	22	4096x1	9060	F3454	MB8107H			P2107B		MM905AL	2160	UPD4111A-2	2640	SVS260	TMS4060-2		7260
	MM5290N-2	150	16	16,384x1		F16K-2PC	MB8116H		HM4116A-2	P4111A-2	MA116P-15			UPD416C-3			TMS4116N-15	TM4416P-2	7116CPE-2
	MM5290N-3	200	16	16,384x1	9016BPC	F16K-3PC	MB8116E		HM4116A-3	P4111A-3	MA116P-20			UPD416C-3			TMS4116N-20	TM4416P-3	7116CPE-3
	MM5290N-4	250	16	16,384x1	9016DPC	F16K-4PC	MB8116N		HM4116A-4	P2117-4	MA116N-4	MA116P-25		UPD416C-1			TMS4116N-25	TM4416P-4	7116CPE-4
	NMC298N	200	16	8192x1						P2109	MK4109								
	NMC4164-15	150	16	65,536x1		F64K-15	MB8264-15		HM4864-2	P2164-20	MA4564-15	MCM6664-15		UPD4164-3			TMS4164-15	TM44164	
	NMC4164N-20	200	16	65,536x1		F4164-20	MB8264-20N		HM4864-3	P2164-20	MA4564-20	M6664-20		UPD4164			TMS4164-20	TM44164C-4	
	MM1702A	850	24	256x8	1702A					1702A	MK1702				1702				
	MM2708Q	450	24	1024x8	AM2708	F2708	MB8518H		HN462708	D2708	MK2708	2708		UPD2708	2708		TMS2708-45	TM322	IM7208
	MM2716Q	450	24	2048x8	AM2716	F2716	MBM2716		HN462716	D2716	MK2716-6	MCM2716		UPD2716		SV2716	TMS2516	TM3220	7116CPE-1
	MM2716-1	350	24	2048x8	AM2716-1	F2716-1	MBM2716H	HM8716-9		2716-1	MK2716-6	MCM2716-35				SV2716-1	TMS2516-35	TM3220-1	
EPROMS	NMC2532Q	450	24	4096x8					HN462532										
	NMC2732Q	450	24	4096x8	AM2732		MB8532		HN462732	D2732				UPD2732					
	MM2758Q-B	450	24	1024x8					D2758										
	MM2564Q	450	28	8192x8							MK2764	MCM66764					TMS2568		
	MM2764Q	450	28	8192x8													TMS2564		
	MM2764-30	300	28	8192x8			MBM2764-30			2764-3									
	DM74S189N	35	16	16x4	27518		MB7058	7602						6320-1	82S23		TBP185A039N		5603
	DM74S287N	50	18	256x4	27521	93427	MB7059	7611		3621				6301-1	82S129		TBP24510		5621
	DM74S298N	35	16	32x8	27518		MB7051	7603						6251-3	12S123		TBP185A035N		5610
	DM74S387N	50	16	256x4	27520	93417	MB7057	7610		3601-1	MK4006			6300-1	UPB403	82S128	TBP245A10		5603
	DM74S471N	50	20	256x8										6309-1			TBP18502N		
	DM74S472N	60	20	512x8	27529			7649						6349-1	UPB425	82S147	TBP28542N		
	DM74S473N	60	20	512x8	27528			7648						6348-1	UPB405	82S146	TBP285A42		
PROMS	DM74S474N	65	24	512x8	27531	93448		7641		3624		7641		6341-1	UPB425	82S141	TBP18546		5625
	DM74S475N	65	24	512x8	27530	93438		7640		3604		7640		6340	UPB405	82S140	TBP285A46		5605
	DM74S570N	50	16	512x4	27512	93436	MB7058	7620		3602		7620		6309-1		82S130	74S270		5604
	DM74S571N	35	16	512x4	27513	93446	MB7059	7621		3622		7621		6308-1		82S131	74S270		5604
	DM74S572N	60	18	1024x8	27532	93452	MB7059	7642		3625		7642		6352-1	UPB406	82S136	345A-1		5606
	DM74S573N	60	18	1024x8	27533	93453	MB7122	7643		3623		7643		6353-1	UPB406	82S137	345A-1		5626
	DM74S574N	40	24	1024x8	275160	93450		7680		3608		7680		6360-1	UPB406	82S160	285A-6		56508
	DM74S575N	40	24	1024x8	275161	93451	MB7132	7681		3628		7681		6361-1	UPB428	82S161	245E-1		56516
	DM74S576N	40	18	2048x4	275184	93514		7684				7684		635840		82S184	245A-81		
	DM74S578N	40	18	2048x4	275185	93515	MB7128	7685				7685		635841		82S185	245B-1		
	DM74S579N	40	24	2048x8	275190			76160		3606				6351680		82S190	285A166		
	DM74S5791N	40	24	2048x8	275191			76161		3636				6351681		82S191	285166		
	DM74S5792N	60	24	512x8	27515			7647R							UPB425	82S115			

This listing is based on manufacturer's current data. For your requirements, we recommend consulting manufacturer's Data Sheets before designing into your circuit.

## RAMS, PROMS and EPROMS CROSS-REFERENCE GUIDE



# MEMORIES

## STATIC RAMS

Part No.	Pins	Function	Price
1101	16	256x1 Static 650ns (MK4007) (2501)	\$1.49
2101	22	256x4 Static 450ns (8101)	2.49
2102	16	1024x1 Static 350ns	.89
21L02	16	1024x1 Static 450ns Low Power	1.49
2111	18	256x4 Static 450ns (8111)	2.95
2112	16	256x4 Static 450ns MOS	2.95
2114N	18	1024x4 Static 450ns (TMS4045-45)	8/13.95 - 1.95
2114N-2	18	1024x4 Static 200ns	8/15.95 - 2.25
2114N-L	18	1024x4 Static 450ns Low Power	8/15.95 - 2.25
2114N-2L	18	1024x4 Static 200ns Low Power	8/17.95 - 2.49
2141N-3	18	4096x1 Static 150ns	3.95
2147N	18	4096x1 Static 70ns	4.95
2148N	18	1024x4 Static 70ns	8.95
TMS4044-45	18	4096x1 Static 450ns (MM5257N)	3.95
TMS4045-45	18	1024x4 Static 450ns (MM2114N)	3.95
5101	22	256x4 Static 450ns (74C920)	4.95
MM5257N	18	4096x1 Static 450ns (TMS4044-45)	4.95
HM6116P-3	24	2048x8 Static 150ns (16K) CMOS	7.95
HM6116P-4	24	2048x8 Static 200ns (16K) CMOS	6.95
HM6116P-L4	24	2048x8 Static 200ns (16K) LP CMOS	7.95
7489	16	16x4 Static 50ns (P3101)	2.25
74C920	22	256x4 Static 250ns (6551-9)	3.95
74C921	18	256x4 Static 250ns	3.95
74C929	16	1024x1 Static 250ns (6508-9)	3.95
74C930	18	1024x1 Static 250ns (6518-5)	3.95
74S189	16	16x4 Static 35ns (93405)	1.95
74S200	16	256x1 Static 80ns (93410)	3.95
74S206	16	256x1 Static 60ns (93411)	3.95
74S289	16	16x4 Static 35ns (P3101A)	2.25
82S10	16	1024x1 Static 50ns O.C. (93415)	3.95
82S25	16	16x4 Static 50ns O.C. (74S289)	2.25

## DYNAMIC RAMS

1103	18	1024x1 Dynamic 300ns (MM5261)	.99
MK4027N-4	16	4096x1 Dynamic 250ns (UPD414)	2.49
4116	16	16,384x1 Dynamic (UPD416) See MM5290 Series	
4164N-150	16	65,536x1 Dynamic 150ns	8/59.95 - 7.95
4164N-200	16	65,536x1 Dynamic 200ns	8/54.95 - 7.49
MM5261N	18	1024x1 Dynamic 300ns (1103)	8/1.95 - .49
MM5262N	22	2048x1 Dynamic 365ns	8/1.95 - .49
MM5270N	18	4096x1 Dynamic 250ns	4.95
MM5280N	22	4096x1 Dynamic 200ns (P2107B)	3.95
MM5290N-2	16	16,384x1 Dynamic 150ns (4116N-2)	8/14.95 - 1.89
MM5290N-3	16	16,384x1 Dynamic 200ns (4116N-3)	8/12.95 - 1.69
MM5290N-4	16	16,384x1 Dynamic 250ns (4116N-4)	8/10.95 - 1.49
MM5298N-3A	16	8192x1 Dynamic (Lower 1/2 of MM5290N)	1.69

30008 1980 Nat. Memory Data Book (464 pg.) . . . \$6.95

## EXPAND YOUR TRS-80\*

to 16K, 32K, or 48K

- \*\*Model 1 = From 4K to 16K Requires (1) One Kit
- Model 3 = From 4K to 48K Requires (3) Three Kits
- Color = From 4K to 16K Requires (1) One Kit

\*\*Model 1 equipped with Expansion Board up to 48K Two Kits Required  
— One Kit Required for each 16K of Expansion —

### TRS-80 16K Conversion Kit

Kit comes complete with 8 each MM5290 (UPD416/4116) 16K Dynamic RAM (\*ns) and documentation for conversion.

TRS-16K2 *150ns	\$16.95
TRS-16K3 *200ns	\$14.95
TRS-16K4 *250ns	\$10.95

### TRS-80 Color 32K or 64K Conversion Kit

Kit comes complete with 8 ea. 4164-2 (200ns), 64K Dyn. RAMs and conversion documentation. Converts TRS-80 color computers from 4K-32K Memory or 16K-64K Memory.

TRS-64K2 (200ns)	\$54.95
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\*TRS-80 is a trademark of Tandy-Radio Shack Corp.

## EPROM PROGRAMMERS

JE608A-16K	Programs 2708/2716	see page 64
JE664A	Programs all 2708, 2716, 2732, 2764 (From 8K to 64K EPROMS)	see Inside Back Cover

## EPROMS

Part No.	Pins	Function	Price
1702A	24	256x8 2K UV EPROM (1µs)	4.95
2708	24	1024x8 8K EPROM 450ns	3.95
TMS2516	24	2048x8 16K EPROM 450ns (Intel 2716)	6.95
TMS2532	24	4096x8 32K EPROM 450ns	9.95
TMS2564	28	8192x8 64K EPROM 450ns	19.95
TMS2716	24	2048x8 16K EPROM 450ns (-5V, +5, +12V)	7.95
2716	24	2048x8 16K EPROM 450ns (Nat. MM2716)	4.95
2716-1	24	2048x8 16K EPROM 350ns	6.95
2732	24	4096x8 32K EPROM 450ns	9.95
2758Q-A	24	1024x8 8K EPROM 450ns (Single +5V)	2.95
MM2764Q	28	8192x8 64K EPROM 450ns	16.95
MM2764-3	28	8192x8 64K EPROM 300ns	19.95

## PROMS

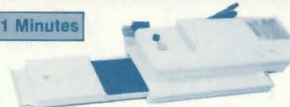
74S188	16	32x8 PROM O.C. (6330-1)	1.49
74S287	16	256x4 PROM T.S. (6301-1)	1.95
74S288	16	32x8 PROM T.S. (6331-1)	1.95
74S387	16	256x4 PROM O.C. (6300-1)	1.95
74S471	20	256x8 PROM T.S. (6309-1)	5.95
74S472	20	512x8 PROM T.S. High Speed (6349-1)	4.95
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74S475	24	512x8 PROM O.C. (6340)	4.95
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74S573	18	1024x4 PROM T.S. (82S137)	4.95
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## UV-EPROM Erasers

8 Chips — 51 Minutes



Ultra-Violet  
Products, Inc.

DE-4

1 Chip — 37 Minutes

Erases 2708, 2716, 2732, 2764, 2516, 2532, 2564. Erases up to 8 chips within 51 minutes (1 chip in 37 minutes). Maintains constant exposure distance of 1". Special conductive foam liner eliminates static build-up. Built-in safety lock to prevent UV exposure. Only 9.00" x 3.70" x 2.60". Complete with holding tray for 8 chips.

Part No.	Price
UVS-11EL Replacement Lamp for DE-4	\$16.95
DE-4 UV-EPROM Eraser	\$79.95



The Black Hole  
EPROM Eraser

9 Chips — 8 Minutes

The Black Hole EPROM eraser will completely & safely erase 9 EPROMs in less than 8 minutes. The Black Hole is a fully automatic cassette loading eraser featuring U-shaped 4000 hr. UV lamps mounted in a special ALZAK (UV reflectivity of .9) parabolic light tunnel. In operation, the user slips in an anti-static Bug Box (3 ea. incl.) containing the EPROMs to be erased into the loading slot on the front panel of Black Hole. The rest is fully automatic. The Black Hole latches the Bug Box into place, turns on the UV lamps & starts its fully solid state (CMOS) UV integration dose timer. The percentage exposure time is monitored & displayed on a front panel LED readout. At the end of the erase cycle, the Black Hole ejects the Bug Box containing the 9 erased EPROMs & turns off power.

Part No.	Price
ULV-008 Replacement Lamp for ERS-008	\$29.95
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N8232	16	8-Bit Input Multiplexer	1.65
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N8281	14	Presetable Binary Counter (74177)	.69
N8284	14	Binary Up/Down Counter	2.95
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N8292	14	Low Power Presetable Decade Counter	2.40
N8293	14	Low Power Presetable Binary Counter	2.40
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N8480	14	Quad 2-Input NAND Gate	1.75
N8481	14	Quad 2-Input NAND Gate Open Collector	1.75
N8731	14	Quad 2-Input Diode Expander	2.10
N8806	14	Dual 4-Input Expander	1.05
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N8826	14	Dual High Speed JK Binary	3.00
N8828	14	Dual High Speed "D" Binary	2.25
N8829	14	AND Input JK Binary	1.25
N8859	14	Dual 4-Input NAND Buffer	1.00
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N8879	14	Triple 3-Input NAND Gate	1.70
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N8885	14	Quad 2-Input NOR Gate	3.25
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82S141	—	4096-Bit PROM (512x8 T.S.)	See 74S474
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DM8098N	16	Tri-State Hex Inverter (74368)	.55
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Order No.	Book	Price
TTL-1	<b>TTL Data Book (179 pages)</b> ..... Over 120 specifications covering the most popular chips in the 7400/74LS Series	\$3.95 with Supplement
CL-1	<b>CMOS/Linear Data Book (211 pages)</b> ..... Over 78 specifications covering the most popular chips in the CMOS/Linear Series	\$4.49 with Supplement
MID-1	<b>Microprocessor/Display Data Book (180 pgs.)</b> . . . . Over 44 specifications covering the Microprocessor Series, LED Displays, Lamps & Modules	\$3.95 with Supplement

**30007S Buy above (3) TTL-1, CL-1, MID-1 as a set \$9.95**

### MICROPROCESSOR USER MANUALS

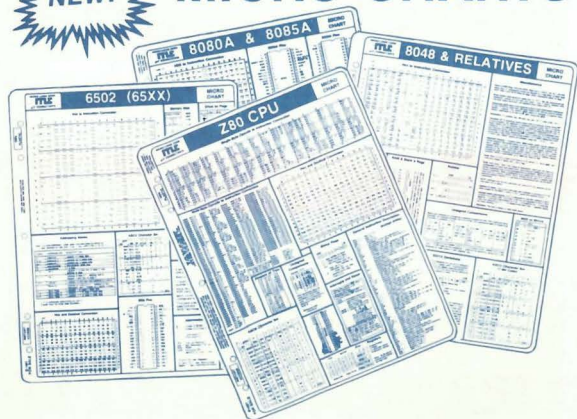
Order No.	Book	Price
M-Z80	<b>Users Manual for Zilog Z80, Z80A</b> (75 pg.)	\$7.50
M-CDP1802	<b>Users Manual for RCA 1802 or Eq.</b> (115 pg.)	\$7.50
M-2650	<b>Users Manual for Signetics 2650 or Eq.</b> (107 pg.)	\$5.00

Sizes: M-Z80 is 7" x 9" — M-CDP1802/2650 are 8 1/2" x 11"

NOTE: The Manufacturers of the Data Books DO NOT print new books each year, so we will carry the most current editions they supply.

NEW!

## MICRO CHARTS



### Instant Data on the Most Popular Computer and Microprocessor Parts

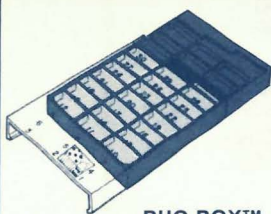
- Fully decoded data — no need to unscramble numbers
- Instant Access
- Compact 8 1/2" x 11" size
- Durable credit card plastic — lasts a lifetime
- Perfect for programmers and engineers — two-sided and totally comprehensive
- Clear and concise tables for: full instruction set, disassembly, ASCII, base conversion, effect of flags, compare vs. jump, interrupt structure, pinout, cycle times, diagrams, bug notes, and much more...

Part No.	Reference	Price
ML-Z80	Z80 CPU	\$5.95
ML-8080A	8080A/8085A	5.95
ML-6502	6502 (65XX)	5.95
ML-8048	8048, Relatives, Algorithms	5.95





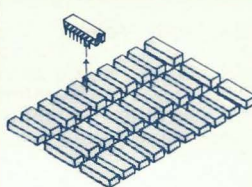
# BUG BOX™ SYSTEMS



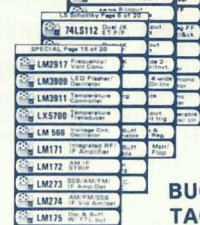
**BUG BOX™**



**BUG CAGE™**



**BUG RUG™**



**BUG TAGS™**

**BUG BOX™** — 30 individual compartments • Stores sixty 8-pin or thirty 14- or 16-pin DIPs • Heavy duty injection molded plastic • Clear plastic cover slides and locks • Cover marked with numbers 1 thru 30 • Compartment size: 1" x 3.75" x .5" deep • Box size: 4.9" x 3.3" x .6" • Weight: 1.75 oz.

## BUG BOX™

Please specify color code: (B) Blue, (R) Red, (W) White, (Y) Yellow

PART NO./COLOR CODE	QTY	PRICE
BGX-001-( )	1	\$ 2.29
BGX-010-( )	10	19.99

## ANTI-STATIC

BGX-001-( )AS	1	\$ 3.29
BGX-010-( )AS	10	28.89

**LSI BIG BUG BOX™** — Designed to store large IC's, Resistors, Capacitors and Diodes • Divided into three compartments measuring 1" x 4.15" x .5" deep • Three vertical and three horizontal dividers included • Heavy duty injection molded plastic • Box size: 4.9" x 3.3" x .6" • Weight: 1.75 oz.

## LSI BIG BUG BOX™

Please specify color code: (B) Blue, (R) Red, (W) White, (Y) Yellow

PART NO./COLOR CODE	QTY	PRICE
BLX-001-( )	1	\$ 3.29
BLX-010-( )	10	28.79

## ANTI-STATIC

BLX-001-( )AS	1	\$ 4.29
BLX-010-( )AS	10	37.89

**BUG CAGE™** — Twelve locations store Bug Boxes, Big Bug Boxes or Bug Trays • Modular and interlocking • Heavy duty injection molded plastic • Each cage has six slip-on locations • Two cages per package • Cage size: 5-1/8" x 5" x 3-7/8" • Four colors available — please specify color code: (B) Blue, (R) Red, (W) White, (Y) Yellow

PART NO./COLOR CODE	PRICE
BGC-001-( ) 2 Cages (6 locations each)	\$11.95/pkg.

**CAGE KEEPER™** — Pins column of Bug Boxes in Bug Cage • 5" model for single cage and 10" model for two stacked cages • Two per package

PART NO.	SIZE	PRICE
CKP-005	5 inch	\$4.98/pkg.
CKP-010	10 inch	6.98/pkg.

**BUG RUG™** — Static discharge protection for CMOS and MOSFET devices • Pre-cut to dimensions of BUG BOX (1" x .35") • Each package contains 30 foam rectangles • BIG BUG RUG package contains 6 foam rectangles 2.08" x 1"

PART NO.	DESCRIPTION	PRICE
BRG-030	30 foam rectangles for Bug Box	\$1.98
BBR-006	6 foam rectangles for LSI Big Bug Box	1.98

**BACK PACK™** — Self-adhesive labels for the back of ICs • Shows exact internal logic in relation to IC pins • 532 labels in each package (including several blank labels) • Each package for 8, 14, 16, 24, 28 and 40-pin ICs • Combo package includes 1,064 labels for TTL and CMOS ICs • Microprocessor package contains 744 labels

PART NO.	DESCRIPTION	PRICE
BPT-012	TTL	\$7.95
BPC-012	CMOS	8.95
BPM-012	Combo	14.95
BPU-012	Microprocessor	9.95

**BUG TRAY™** — Stores in Bug Cage • Molded plastic • Three styles: Open (1 compartment 3.05" x 4.6" x .6"); Vertical (5 compartments .5" x 4.6" x .6"); and Horizontal (8 compartments .4" x 3.95" x .6") • Ideal for tools, hardware, components, etc. • Tray size: 3.55" x 5.05" x .6" • Black only

PART NO.	DESCRIPTION	PRICE
BTH-001	Horizontal Bug Tray	\$1.95
BTV-001	Vertical Bug Tray	1.95
BTO-001	Open Bug Tray	1.95
BTX-003	1 of each Bug Tray (3)	4.98

**BUG TAGS™** — Self-adhesive, easy-to-read labels for marking Bug Box and LSI Big Bug Box • Most popular components • Field engineering package marks back cover of Bug Box with blank layout numbered 1 thru 30 • Bug Tag Special package contains 200 labels covering linear devices, including voltage regulators, op amps, instrumentation amps, etc. • Mixer package contains TTL, CMOS, LS Schottky and Special Bug Tags.

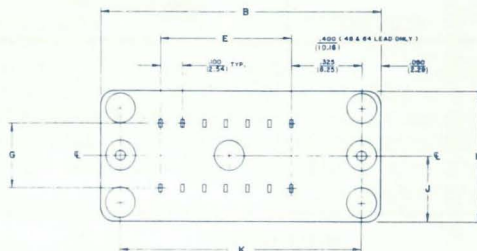
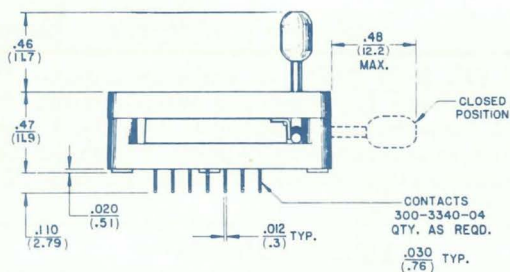
PART NO.	DESCRIPTION	QTY.	PRICE
BTT-200	TTL	200	\$4.98
BTC-200	CMOS	200	4.98
BTK-200	LS Schottky	200	4.98
BTS-200	Special	200	4.98
BTF-012	Field Engineer	12	3.98
BTM-800	Mixer	800	13.95
BTU-400	Microprocessor	400	9.95
BTR-200	Resistor	200	5.98
BTP-200	Capacitor	300	7.95
BTZ-200	Zener/Diode	200	4.98
BTB-200	Blank	200	3.98



**PHYSICAL DESCRIPTION:** • Body Material: G.F. PSF Plastic • Contact Material: BeCu • Plating: Nickel Boron • Contact Resistance:  $\leq .005$  ohms • Voltage Breakdown: 2,000 volts • Operating Life: 25,000 to 50,000 tests • Insertion-Extraction Pressure: Zero Force • Temperature Range: -55°C to 150°C



**224-3344  
SOCKET**

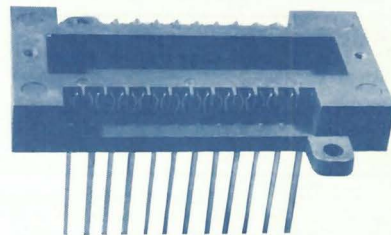


SOCKET PART NO.	LDS	LDS CTRS ACCEPTED	DIMENSIONS						PRICE
			B	E	G	H	J	K	
214-3339	14	.17-.43(4.3-10.9)	1.30(33.0)	.604(15.34)	.300(7.62)	.603(15.32)	.302(7.67)	1.115(28.32)	\$ 5.95
216-3340	16	.17-.43(4.3-10.9)	1.39(35.3)	.705(17.91)	.300(7.62)	.602(15.29)	.301(7.64)	1.218(30.94)	6.19
218-3341	18	.17-.43(4.3-10.9)	1.49(37.8)	.805(20.45)	.300(7.62)	.598(15.19)	.299(7.59)	1.317(33.45)	6.95
220-3342	20	.17-.43(4.3-10.9)	1.59(40.9)	.905(22.99)	.300(7.62)	.603(15.32)	.301(7.64)	1.419(36.04)	7.49
222-3343	22	.27-.53(6.9-13.5)	1.69(42.9)	1.007(25.58)	.400(10.16)	.703(17.86)	.352(8.94)	1.519(38.58)	8.95
224-3344	24	.47-.73(11.9-18.5)	1.79(45.5)	1.107(28.12)	.600(15.24)	.907(23.04)	.454(11.53)	1.610(40.89)	7.95
228-3345	28	.47-.73(11.9-18.5)	1.99(50.5)	1.307(33.2)	.600(15.24)	.905(22.99)	.452(11.48)	1.827(46.41)	9.49
240-3346	40	.47-.73(11.9-18.5)	2.60(66.0)	1.913(48.59)	.600(15.62)	.898(22.81)	.449(11.4)	2.421(61.49)	10.95

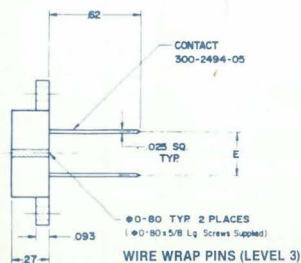
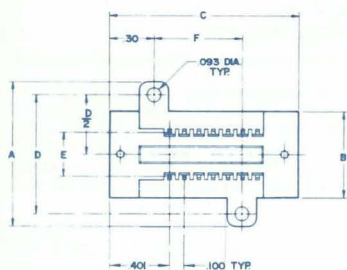
— ZIP DIP® II SOCKETS Mount in ZIP DIP® II RECEPTACLES —

## PHYSICAL DESCRIPTION:

• Body Material: G.F. PSF Plastic  
• Contact Material: BeCu  
• Plating: Nickel Boron • Contact Type: Wire Wrap (Level 3)  
• Temperature Range: -55°C to 150°C • Contact Resistance:  $\leq .005$  ohms



**224-3597  
RECEPTACLE**



RECEPTACLE PART NO.	LDS	DIMENSIONS						PRICE
		A	B	C	D	E	F	
214-3592	14	1.000	.600	1.283	.820	.300	.600	\$ 8.95
216-3593	16	.960	.560	1.375	.773	.300	.700	9.49
218-3594	18	.950	.550	1.486	.770	.300	.804	9.95
220-3595	20	1.000	.600	1.583	.820	.300	.900	10.49
222-3596	22	1.060	.650	1.687	.875	.405	1.005	11.95
224-3597	24	1.265	.860	1.772	1.080	.603	1.100	10.95
228-3598	28	1.260	.860	1.983	1.085	.600	1.300	12.95
240-3599	40	1.270	.865	2.583	1.085	.606	1.900	14.49

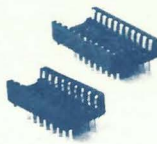


# IC SOCKETS

TO-3 SOCKETS • TO-5 SOCKETS • HEADER PLUGS & COVERS • MOLEX PINS & NESTS

## IC Solderetail — Low Profile (Tin) Sockets

Part No.	1-9	10-99	100-999
8 pin LP*	\$ .16	\$ .14	\$ .13
14 pin LP*	.17	.15	.14
16 pin LP*	.19	.17	.16
18 pin LP*	.26	.24	.23
20 pin LP*	.30	.27	.25



Part No.	1-9	10-99	100-999
22 pin LP*	\$ .31	\$ .28	\$ .26
24 pin LP*	.33	.30	.28
28 pin LP	.40	.37	.35
36 pin LP	.46	.42	.39
40 pin LP	.49	.46	.43

## Solderetail Standard (Tin)

14 pin ST	\$ .29	\$ .27	\$ .25
16 pin ST	.34	.32	.30
18 pin ST	.38	.36	.34
20 pin ST	.45	.43	.41



24 pin ST	\$ .49	\$ .46	\$ .43
28 pin ST	.69	.67	.63
36 pin ST	.89	.85	.81
40 pin ST	.99	.95	.89

## Solderetail Standard (Gold ★)

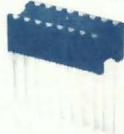
8 pin SG	\$ .30	\$ .27	\$ .25
14 pin SG	.43	.39	.37
16 pin SG	.47	.43	.41
18 pin SG	.53	.49	.47



24 pin SG	\$ .69	\$ .65	\$ .61
28 pin SG	.81	.76	.72
36 pin SG	1.09	1.03	.97
40 pin SG	1.21	1.14	1.08

## Wire Wrap Sockets (Gold ★) Level 3

8 pin WW*	\$ .49	\$ .45	\$ .42
10 pin WW	.65	.62	.59
14 pin WW*	.65	.62	.59
**14 pin TWW*	.45	.42	.39
16 pin WW*	.69	.65	.61
**16 pin TWW*	.49	.45	.42
18 pin WW*	.89	.85	.79

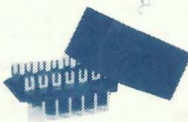


20 pin WW*	\$ 1.09	\$ 1.05	\$ .99
22 pin WW*	1.25	1.19	1.15
24 pin WW*	1.29	1.23	1.18
28 pin WW	1.59	1.50	1.45
36 pin WW	1.85	1.75	1.69
40 pin WW	1.99	1.89	1.79

\*PRE-PACKAGED IN TUBES OF 10 EACH \*\*TIN PLATING (TWW)

## HEADER PLUGS (GOLD ★)

Part No.	1-9	10-99	100-999
14 pin HP	\$ .65	\$ .59	\$ .55
16 pin HP	.69	.65	.59
24 pin HP	.99	.93	.89
28 pin HP	1.25	1.15	1.10



## HEADER COVERS

Part No.	1-9	10-99	100-999
14 pin HC	\$ .15	\$ .13	\$ .12
16 pin HC	.17	.15	.13
24 pin HC	.25	.23	.21
28 pin HC	.45	.42	.39

## Phenolic TO-5

Part No.	1-9	10-99	100-999
3 pin TS	\$ .55	\$ .45	\$ .39
4 pin TS	.79	.75	.69



## Transistor Sockets

Part No.	1-9	10-99	100-999
8 pin TS	\$ 1.49	\$ 1.39	\$ 1.29
10 pin TS	1.69	1.59	1.49

Part No.	1-9	10-99	100-999
MP-3452-T	\$ .35	\$ .29	\$ .25

(BOTTOM VIEW)



## Plastic TO-3 Socket

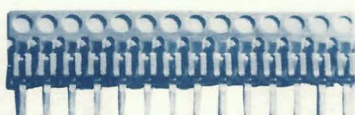
TO-3 Sockets for  
LM309K, LM320K, LM340K, etc.

## IC Connector Pins

## MOLEX

## Plastic Nests for IC Connector Pins

Pin Spacing: .100"  
Size: 5/16"H  
Pre-packaged in strips  
Minimum order: 100 pins



Part No.	Minimum 100 each	1000 each
M-530-1	\$ 1.95/C	\$ 16.00M



Part No.	Minimum 100 each	1000 each
PN7	\$ 3.95/C	\$ 32.00M
PN8	4.25/C	34.00M
PN9	6.95/C	55.00M
PN10	7.49/C	60.00M

Available in 7,8,9 and 10 pin blocks only (pins not included)

\* PRICES SUBJECT TO CHANGE DUE TO FLUCTUATING GOLD COST



# FANS

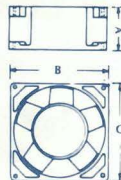


## Muffin-Style Fan

**The dependable, low cost, largest selling fan for commercial cooling applications.**

- 105 cubic feet per minute free air delivery • 4.68" square x 1.50" deep
- Weight: 17 oz. • Acoustical rating as low as NC-38 • More than 10 years continuous duty at 20°C • Impedance protected • For ambients to 70°C • Bearing: Sleeve • Volts: 115 50-60Hz • Watts: 14

Part No. MU2A1-U Cleaned and Tested (used) .... \$ 9.95 ea.  
Part No. MU2A1-N New ..... 14.95 ea.



## Sprite-Style Fan

Apple Users!

- Delivers up to 36 cubic feet of air per minute • Fan measures just 3.125" square x 1.665" deep • Performance against back pressure, 22cfm at .10", 28cfm at .08", 32cfm at .05" static pressure • Two patented bearing designs available, both rated at 10 years life • Venturi and skeleton are die-cast aluminum alloy • Ideally suited to use in standard 3 1/4" high relay rack panels • Bearing Sleeve (WS) • Volts: 115VAC • Dimensions: A-1.665" B-3.125" C-3.125"

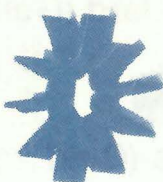
Part No. PWS2107U Cleaned and Tested (used) ... \$ 9.95 ea.  
Part No. PWS2107F New ..... 14.95 ea.

# HEAT SINKS



### For TO-220 Case

- Black Anodized
  - 1-1/16" L x 7/8" W x 7/16" H
  - Aluminum
- Part No. Price Ea.  
291-36H ..... \$ .25



### For TO-5 Case

- Black Anodized
  - .72" x .250"
  - Beryllium Copper
- Part No. Price Ea.  
205-CB (2230B-5) ... \$ .49



### For TO-220 Case

- Black Anodized
  - 1.00" W x 1-3/16" H x 1/2" D
  - For SCR's or Linear IC's
- Part No. Price Ea.  
6030B ..... \$ .39



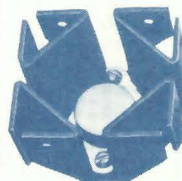
### For TO-3 Case

- Black Anodized
  - 1" L x 1.56" H x .48" D
  - Compact - Low Profile
  - No. 671-3B — 1.40" L
  - No. 672-3B — 2.00" L
- Part No. Price Ea.  
671-3B ..... \$ .59  
672-3B ..... \$ .69



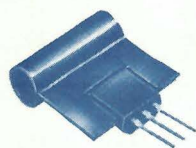
### For TO-3 Case

- Black Anodized
  - 1.81" L x 1.81" W x .50" H
- Part No. Price Ea.  
6001-B2 ..... \$ .79



### For TO-3 Case

- Black Anodized
  - 1-7/8" L x 1-7/8" W x 1 1/4" H
- Part No. Price Ea.  
690-TO3 ..... \$ .99



### For TO-202 Case

- Black Anodized
  - .80" W x .85" H
- Part No. Price Ea.  
THM6047 ..... \$ .35



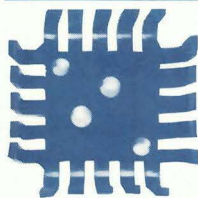
### For TO-3 Cases

- Black Anodized or
  - Clear Aluminum
  - 1.88" L x 1.375" W x 1" H
- Part No. Price Ea.  
6014B BlkAn 3/4" H ... \$ .69  
6015C Clear 1" H ... \$ .59  
6016B BlkAn 1 1/4" H ... \$ .79



### For TO-3/TO-220 Cases

- Black Anodized
  - 1-5/8" L x 1 1/4" W x 1 1/4" H
- Part No. Price Ea.  
LAT0127B ..... \$ .99



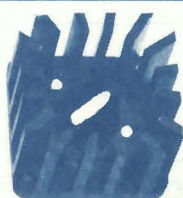
### For TO-3 Case

- Black Anodized
  - 1 3/4" L x 1 3/4" W x 1 1/4" H
  - Material thickness: .062"
- Part No. Price Ea.  
6054B ..... \$ .89



### For TO-220 Case

- Black Anodized
  - 1 3/4" L x 1 3/4" W x 1 1/4" H
  - Material thickness: .062"
  - Holds 2 ea. TO-220 cases
- Part No. Price Ea.  
6083B ..... \$ .89



### For TO-3 Case

- Black Anodized
  - 1 3/4" L x 1 3/4" W x 1" H
  - No. 680-1.00" H
  - No. 680-1.25" H
- Part No. Price Ea.  
680-1.00 (6003B-2) ... \$ .99  
680-1.25 (6004B-2) ... \$ 1.25



- Quality Aluminum (Black Anodized)
  - 4" L x 2" W x 1-3/16" H (approximate size)
  - For TO-3 Cases
- DUDE-1 ..... \$1.95 each

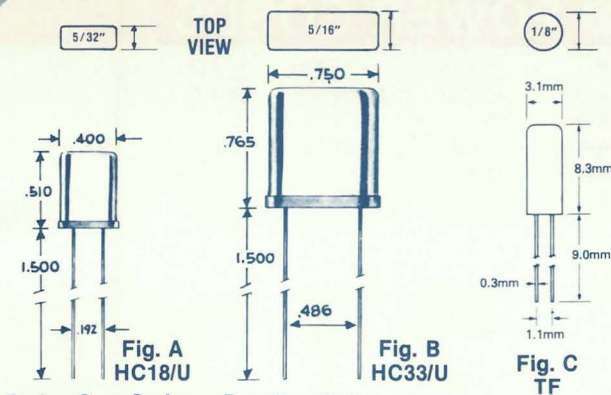


- Quality Aluminum (Black Anodized)
  - 4" L x 2" W x 1-3/16" H (approximate size)
  - For Rectifier Diodes
- DUDE-2 ..... \$1.95 each



- Quality Aluminum (Black Anodized)
  - 4" L x 2" W x 1-3/16" H (approximate size)
- DUDE-3 Undrilled — You Drill Your Own ..... \$2.25  
DUDE-4 Pre-drilled for a TO-3 case ..... \$2.25





Style: S = Series P = Parallel

Part No.	Frequency	Use With:	*Case/Style	Price
CY1A	1.000MHz	F8,Z8,1802, MC6800, MC6860	BP13	\$4.95
CY1.84	1.8432MHz	MOT MC14411	BP13	4.95
CY2A	2.000MHz	F8, CDP1802, 3850	BP20	4.95
CY2.01	2.010MHz	GI AY-3-8500-1 (1/4" Leads)	BS	1.95
CY2.45	2.4576MHz	34702, IM6100C, F8	BS	3.95
CY2.50	2.500MHz	Zilog Z80	BS	3.95
CY3.27	3.2768MHz	Intersil 7205, IM6100C	AP15	3.95
CY3.57	3.579545MHz	MM5369, 6801, 6803 TV Color Burst Crystal	BP18	3.95
CY3A	4.000MHz	Z80A, 4040, 4201, Z8001, 4004, Intersil 6100, Z8002	AP12	3.95
CY4.19	4.194304MHz	ICM 7038A	AP12	2.95
CY4.91	4.916MHz	Z80, Z80A, COM5026	AS	2.95
CY7A	5.000MHz	Western Digital MCP1600	AP20	2.95
CY5.068	5.0688MHz	COM5016	AS	2.95
CY5.18	5.185MHz	Intel 4004, 4040, 4045, 4048 and 4201	AP20	2.95
CY5.24	5.24288MHz	Intersil 7207	AP20	2.95
CY6.00	6.000MHz	CP1600, 8035, 8048, 8049, 8747, MCS48, Z80B	AS	2.95

# CRYSTALS

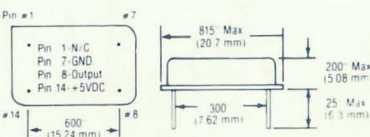
"GENERAL PURPOSE" CALIBRATION AT AMBIENT TEMPERATURE (25°) IS WITHIN  $\pm .005\%$  OF SPECIFIED FREQUENCY. \*In the Case/Style column below, we have listed the case and style (series or parallel resonance) of the crystal. If it is parallel resonance, we have listed the load capacitance. For example:

CY1A BP13 = HC/33U Parallel 13pF  
(Case) (Resonance) (Load Cap.)

Part No.	Frequency	Use With:	*Case/Style	Price
CY6.14	6.144MHz	Intel P8085	AP30	\$2.95
CY6.40	6.400MHz	RCA CDP1802	BP20	2.95
CY6.55	6.5536MHz	Intersil 7207, 7045, 7034	AP20	2.95
CY8.000	8.000MHz	CP1600, IM6100C, MC68000L8, TMS9980, 8X300, MC6875	AS	2.95
CY12A	10.000MHz	TTL Micro Logic	AS	2.95
CY14A	14.31818MHz	4X Color Burst	AS	2.95
CY16.00	16.000MHz	8080, 8008, 8224, 8284	AS	2.95
CY19A	18.000MHz	Intel 8080A, 8008, 8224	AS	2.95
CY18.43	18.432MHz	8080A, 8008, 8224	AS	3.95
CY20A	19.6608MHz	8080, 8008, 8224	AS	3.95
CY22A	20.000MHz	Intel 8080/8008	AS	3.95
CY22.11	22.1184MHz	AM 9080, UCOM80, 8080A, TMS 8080	AS	3.95
CY30A	32.000MHz	8080, 8008, 8224	AS	3.95
NTF32.38	32.768KHz	Watches	CP10.5	2.95
CY36.00	36.000MHz	8080, 8008, 8224, 8080A	AS	2.95
CY48.00	48.000MHz	TMS9400, 9404, SNLS362	AS	2.95
SRX1504	49.435MHz	LM1872N	AP24	3.95
SRX1505	49.890MHz	LM1871N	AS	3.95

## CRYSTAL CLOCK OSCILLATORS — TTL Only

A single component oscillator utilizing a combination of thick film hybrid and quartz crystal technology. Suitable for use in computer and digital based equipment. Frequency stability  $\pm 100$  ppm. Input voltage: +5VDC,  $\pm 0.5$ VDC. Maximum current: 20mA.



Part Number	Frequency	Price
OSC 1.000	1.0000 MHz	\$9.95
OSC 1.843	1.8432 MHz	9.95
OSC 2.000	2.0000 MHz	9.95
OSC 4.000	4.0000 MHz	9.95
OSC 8.000	8.0000 MHz	9.95
OSC 10.000	10.0000 MHz	9.95
OSC 16.000	16.0000 MHz	9.95
OSC 18.432	18.4320 MHz	9.95
OSC 19.660	19.6608 MHz	9.95
OSC 20.000	20.0000 MHz	9.95
OSC 32.000	32.0000 MHz	9.95



# WIRE, CABLE, AND POWER CORDS



**30 AWG  
KYNAR WIRE WRAP  
SOLID CONDUCTOR  
WIRE**

PART NO.	AWG	COLOR	25 FT. (Min.)	100 FEET	1000 FEET
130W	30 AWG	White	\$2.49 lot	\$4.95 C	\$29.95 M
130Y	30 AWG	Yellow	2.49 lot	4.95 C	29.95 M
130R	30 AWG	Red	2.49 lot	4.95 C	29.95 M
130G	30 AWG	Green	2.49 lot	4.95 C	29.95 M
130BE	30 AWG	Blue	2.49 lot	4.95 C	29.95 M
130BK	30 AWG	Black	2.49 lot	4.95 C	29.95 M

PLEASE SPECIFY PART NO. AND FOOTAGE WHEN ORDERING



**28 AWG  
Flat Multi-Colored  
Stranded  
RIBBON CABLE**

PART NO.	Conductors	COLOR	1-19 FEET	20-99 FEET	100 FEET
201-10	10	Multi	\$ .59	\$ .49	\$ .39
201-16	16	Multi	.99	.79	.69
201-25	25	Multi	1.29	1.09	.99
201-34	34	Multi	1.49	1.39	1.29
201-44	44	Multi	1.79	1.69	1.59
201-56	56	Multi	2.49	2.39	2.29

PLEASE SPECIFY PART NO. AND FOOTAGE WHEN ORDERING



**28 AWG  
Flat Grey  
Stranded  
T&B/Ansley**

**RIBBON CABLE**

PART NO.	Conductors	COLOR	1-19 FEET	20-99 FEET	100 FEET
171-14	14	Grey	\$.51	\$.41	\$.31
171-16	16	Grey	.59	.49	.39
171-24	24	Grey	.79	.69	.59
171-25	25	Grey	.83	.73	.63
171-40	40	Grey	1.19	1.09	.99

PLEASE SPECIFY PART NO. AND FOOTAGE WHEN ORDERING



**Coaxial CABLE**

PART NO.	1-19 FEET	20-99 FEET	100-999 FEET	1000 FEET
RG58C/U	\$.39	\$.29	\$.25	\$.19
RG59B/U	.41	.31	.27	.21

PLEASE SPECIFY PART NO. AND FOOTAGE WHEN ORDERING



**RETRACTILE  
MICROPHONE CABLES**

Uses: CB, Ham, Microphones, Language Labs, Music Equipment, Mobile Equipment, etc.  
• 2 Conductor 22AWG (26/36) tinned soft copper PVC insulated • 19" coiled (stretches to 8 feet) • Long flex life • Resistant to effects of sun, oil, ozone • Recommended for outdoor use

Part No.	1-9	10-99	100
17008 .....	\$1.95	\$1.69	\$1.49

NEMA 5-15P



**3-CONDUCTOR  
POWER SUPPLY CORDS  
Molded Vinyl Grounding Plug  
PH-290B**

Outer Jacket Stripped 1½"

**POWER CORDS**



Part No.	Length Cord (Ft.)	AWG (Stranded)	Nom OD (Inches)	Rating	Insulation	Color	PRICE
17236	6	18 (41x34)	.265	1250 Watts 10A-125V	SV Rubber	Black	\$1.69
17238	8	18 (41x34)	.265	1250 Watts 10A-125V	SV Rubber	Black	\$1.89
17237	6	18 (41x34)	.253	1250 Watts 10A-125V	SVT Vinyl	Grey	\$1.59
17239	8	18 (41x34)	.253	1250 Watts 10A-125V	SVT Vinyl	Grey	\$1.79



Figure 1



Figure 2

**18 AWG  
TWO CONDUCTOR  
POWER CORDS**

Part No.	Length	Color	Type	Price Each
842-812	6½ feet	White	Figure 1	\$.49
362-812	8 feet	Black	Figure 1	\$.59
435-802	13 feet	Black	Figure 2	\$.79



# CONNECTORS

## PC Card Edge Connectors

### PC AND SOLDER EYELET



Double  
Read-Out

Fits All  
.054 to .070  
PC Boards

15/30SE

Part No.	Contacts	Spacing	Description	Price
15/30SE	15/30	.156	Solder Eyelet	\$1.79 ea.
18/36SE	18/36	.156	Solder Eyelet	1.95 ea.
22/44PC	22/44	.156	Printed Circuit (without mounting ears)	.99 ea.
22/44SE	22/44	.156	Solder Eyelet	2.49 ea.
R636-2	36/72	.100	Solder Eyelet	9.95 ea.
50/100SE	50/100	.125	Solder Eyelet	9.95 ea.



Double  
Read-Out

Fits All  
.054 to .070  
PC Boards

67031-5

### WIRE WRAP

Part No.	Contacts	Spacing	Description	Price
22/44WW	22/44	.156	W/W type - 3 level	\$4.95 ea.
R681-1	50/100	.125	W/W type - 3 level	7.95 ea.
R681-2	50/100	.125	W/W type - 1 level	6.95 ea.
67031-5	22/44*	.156	W/W type - 3 level	3.95 ea.

\*PINS ARE .0625" WIDE x .03" THICK

## CABLE RF COAXIAL CONNECTORS

	PART NO.	DESCRIPTION	FITS CABLE	PRICE
	PL259	UHF Plug (83-1SP)	RG8,11	\$ .89
	SO239	UHF Panel Receptacle (83-1R)	---	\$ .69
	PL258	UHF Straight Adapter (83-1J)	---	\$ .89
	UG175/U	UHF Reducing Adapter (83-185)	RG55,58	\$ .49
	UG88/U	BNC Plug (31-002)	RG55,58	\$1.49
	UG89/U	BNC Jack (31-005)	RG55,58	\$1.69
	UG306/U	BNC Angle Adapter (31-009)	---	\$2.49
	UG260/U	BNC Plug (31-012)	RG59,71	\$1.49
	UG1094/U	BNC Bulkhead Receptacle	---	\$ .89
	RG58C/U	Coaxial Cable	Fits Connector UG175/U UG88/U UG89/U	See Page 22
	RG59B/U	Coaxial Cable	Fits Connector UG260/U	See Page 22

NOTE: BNC mates BNC; UHF mates UHF only

## D-Subminiature Connectors

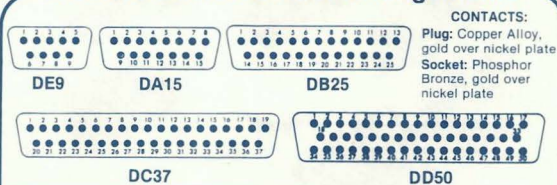


Meets RS232

— Solder Type Contacts —

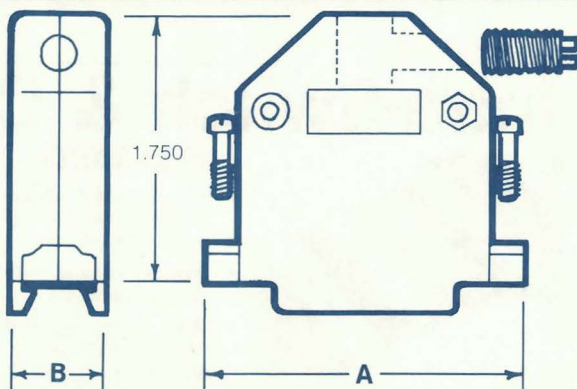
Part No.	Description	Price
DE9P	9 Contact Plug	\$1.79
DE9S	9 Contact Socket	1.95
DA15P	15 Contact Plug	1.95
DA15S	15 Contact Socket	2.95
DB25P	25 Contact Plug (RS232)	2.49
DB25S	25 Contact Socket (RS232)	3.25
DB25P-831	25 Contact Right Angle Plug (RS232)	4.95
DB25S-831	25 Contact Right Angle Socket (RS232)	5.25
DC37P	37 Contact Plug	4.95
DC37S	37 Contact Socket	5.95
DD50P	50 Contact Plug	5.95
DD50S	50 Contact Socket	6.95
D20418-2	2 Screw Lock Assemblies for mounting any D-Subminiature Connector Hood to a panel	.79

### D-Series Basic Contact Arrangements



D-Subminiature Connectors accommodate up to 20AWG wire.

## D-Subminiature Hoods



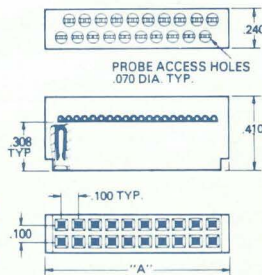
Part No.	Fits Connectors	Dim A (in.)	Dim B (in.)	Max Cable Size (in.)	Price
DE-9H	DE-9	1.21	.62	.25	\$1.19
DA-15H	DA-15	1.55	.62	.34	1.29
DB-25H	DB-25	2.09	.62	.375	1.25
DC-37H	DC-37	2.74	.62	.375	1.39
DD-50H	DD-50	2.64	.731	.45	1.49

Connector Hood material is XYLON (2-Piece Grey Hood)



# SOCKET JUMPERS

## FLAT RIBBON CABLE ASSEMBLIES



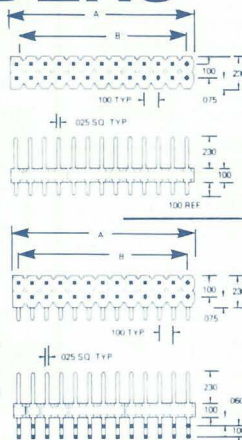
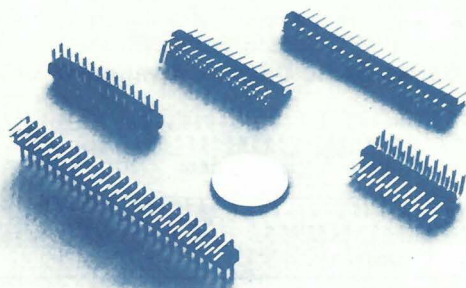
Stranded, 28AWG with laminated PVC insulation. Electric cable has red stripe on one edge for orientation. Used only on double-end and daisy-chain assemblies.

Mates with two rows of .025" square or diameter posts (Jumper Headers) on patterns of .100" centers and shielded receptacles. Probe access holes in back. Choice of 6" or 18" length.

Part No.	No. of Contacts	Length	Dim. "A"	Price
924003- 6R	26	6"	1.460	<b>\$ 8.95</b>
924003-18R	26	18"	1.460	<b>9.65</b>
924005- 6R	40	6"	2.160	<b>12.95</b>
924005-18R	40	18"	2.160	<b>13.95</b>
924006- 6R	50	6"	2.660	<b>14.95</b>
924006-18R	50	18"	2.660	<b>15.95</b>

# JUMPER HEADERS

## STRAIGHT



- Solder to PC boards for instant plug-in access via socket-connector jumpers
- .025" square posts are molded into plastic header strip on a .10" x .10" matrix
- Choice of straight or right angle configurations

Part Number	No. Posts	Dim "A"	Dim "B"	Price 2 per pkg.
923863-R	26	1.3	1.2	<b>\$2.59</b>
923865-R	40	2.0	1.9	<b>\$3.79</b>
923866-R	50	2.5	2.4	<b>\$4.49</b>

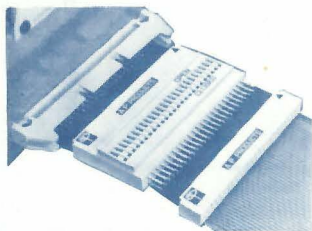
## RIGHT-ANGLE



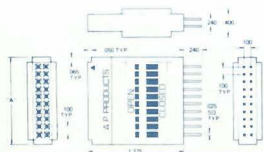
Part Number	No. Posts	Dim. "A"	Dim. "B"	Price 2 per pkg.
923873-R	26	1.3	1.2	<b>\$3.29</b>
923875-R	40	2.0	1.9	<b>\$4.79</b>
923876-R	50	2.5	2.4	<b>\$5.79</b>

## Intra-Switch & Connectors

## INTRA-SWITCH

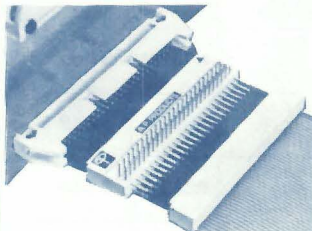


- Permits instant line-by-line switching for diagnostic or QA testing.
- Switches actuated with pencil or probe tip.
- Mates with standard .10" x .10" dual-row connectors.

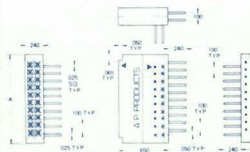


Part No.	No. of Confs.	Dim. "A"	Model No.	Price Each
922578-26	26	1.460	IS-26	\$16.95
922578-50	50	2.660	IS-50	\$25.95

## INTRA-CONNECTOR



- Permits quick testing of previously unprobeable circuits.
- Provides both straight-in and right-angle functions.
- Mates with standard .10"x.10" dual-row connectors.



Part No.	No. of Confs.	Dim. "A"	Model No.	Price Each
922576-26	26	1.460	IC-26	\$ 8.79
922576-50	50	2.660	IC-50	\$12.95

TWO INTRA-CONNECTORS USED IN CONJUNCTION WITH THE INTRA-SWITCH FORM A COMPLETE TEST ASSEMBLY FOR PROBING SIGNALS UNDER NO LOAD AND FULL LOAD CONDITIONS.



## Standard DIP Jumpers



DJ16-3-16

All jumpers come with low profile DIP plugs with heavy duty pins for repeated disconnect applications.

JAMECO Part No.	AP Cross-Reference	No. Pins	Description	Cable Length	Price
DJ14-1	924102-12	14	single end	12 in.	\$1.79
DJ14-2	924102-24	14	single end	24 in.	2.05
DJ14-3	924102-36	14	single end	36 in.	2.35
DJ14-1-14	924106-12	14	double end	12 in.	2.95
DJ14-2-14	924106-24	14	double end	24 in.	3.19
DJ14-3-14	924106-36	14	double end	36 in.	3.49
DJ16-1	924112-12	16	single end	12 in.	1.89
DJ16-2	924112-24	16	single end	24 in.	2.19
DJ16-3	924112-36	16	single end	36 in.	2.59
DJ16-1-16	924116-12	16	double end	12 in.	2.95
DJ16-2-16	924116-24	16	double end	24 in.	3.29
DJ16-3-16	924116-36	16	double end	36 in.	3.59
DJ24-1	924122-12	24	single end	12 in.	2.69
DJ24-2	924122-24	24	single end	24 in.	3.19
DJ24-3	924122-36	24	single end	36 in.	3.59
DJ24-1-24	924126-12	24	double end	12 in.	4.49
DJ24-2-24	924126-24	24	double end	24 in.	4.95
DJ24-3-24	924126-36	24	double end	36 in.	5.39
DJ40-1	924132-12	40	single end	12 in.	5.39
DJ40-2	924132-24	40	single end	24 in.	6.19
DJ40-3	924132-36	40	single end	36 in.	6.89
DJ40-1-40	924136-12	40	double end	12 in.	9.49
DJ40-2-40	924136-24	40	double end	24 in.	10.29
DJ40-3-40	924136-36	40	double end	36 in.	10.95

## 609 Custom DIP Jumpers

### CUSTOM DIP JUMPER ORDERING INSTRUCTIONS:

CONNECTOR	PRICE	CABLE	PRICE
609/14 pin . . . .	\$1.65 ea.	14 Conductor . . . .	\$.35/ft.
609/16 pin . . . .	\$1.70 ea.	16 Conductor . . . .	\$.39/ft.
609/24 pin . . . .	\$2.45 ea.	24 Conductor . . . .	\$.59/ft.
609/40 pin . . . .	\$5.69 ea.	40 Conductor . . . .	\$.99/ft.

**Example:** If you desire a 5 foot jumper with two 609/16-pin connectors, you would order:

609/16-5-16 CUSTOM

\$1.70 x 2 (609/16 pin connectors) = . . . . . \$3.40

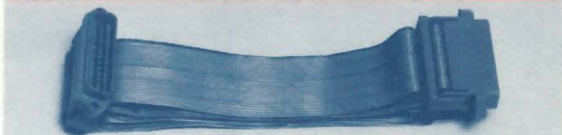
\$ .39 x 5 (16 conductor cable) = . . . . . \$1.95

This (609/16-5-16 Custom) cable would cost . . . . . \$5.35

Please specify "CUSTOM" after the part number to ensure your order will be filled correctly.

(Important: Please specify cable in FEET, *not inches*.)

## Standard DB25 Series Cables



DB25P-4-P

Meets RS232

Now you can order DB25 "P" or "S" connectors with the cable necessary to fit your application. Choose from our standard flat cable in 4-foot lengths.

### STANDARD CABLES

PART NO.	CABLE LENGTH	CONNECTORS	PRICE
DB25P-4	4 feet	1-DB25P	\$ 7.95 each
DB25S-4	4 feet	1-DB25S	8.49 each
DB25P-4-P	4 feet	2-DB25P	13.49 each
DB25P-4-S	4 feet	1-DB25P 1-DB25S	13.75 each
DB25S-4-S	4 feet	2-DB25S	13.95 each

## 609 Custom Cables

### CUSTOM CABLE ORDERING INSTRUCTIONS:

CONNECTOR	PRICE	CABLE	PRICE
609-25P . . . . .	\$6.25 ea.	25 Conductor . . . .	\$63/ft.
609-25S . . . . .	\$6.50 ea.		

**Example:** If you desire a 5 foot cable with two 609/25S connectors, you would order:

609/25S-5-S CUSTOM

\$6.50 x 2 (609/25S Sockets) = . . . . . \$13.00

\$ .63 x 5 (25 Conductor Cable) = . . . . . \$ 3.15

This (609/25S-5-S Custom) cable would cost . . . . . \$16.15

Please specify "CUSTOM" after the part number to ensure your order will be filled correctly.

(Important: Please specify cable in FEET, *not inches*.)

### DIP Jumper Specifications

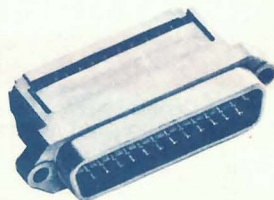


#### LOW PROFILE DIP PLUGS with Heavy Duty Pins

Features exclusive one-piece design with TULIP® shaped contact for connecting to DIP sockets.

• Insulation Material: Glass reinforced thermoplastic rated 94 V-O • Contact material: Beryllium Copper • Contact plating: Gold over nickel • Current rating: 1 amp • Insulation resistance:  $\geq 1 \times 10^9$  Ohms • Dielectric strength:  $\geq 500$ VDC at sea level • Temperature rating: -25°C to 105°C

### DB25 Series Specifications



#### "D" Connector-Pin & Socket

• Insulation material: Glass reinforced thermoplastic rated 94 V-O • Contact material: Beryllium Copper • Contact plating: Gold over nickel • Current rating: 3 amps • Insulation resistance:  $\geq 1 \times 10^9$  ohms • Dielectric strength:  $\geq 500$ VDC at sea level • Temperature rating: -55°C to 105°C

— ALL CUSTOM ASSEMBLIES MUST BE PREPAID BEFORE ASSEMBLY —  
NO RETURNS ON CUSTOM JUMPER AND CABLE ASSEMBLIES



# TRANSISTORS

Part No.	Cross-Ref. to ECG	★ Type Case	BVCEO Min.	VCE (Sat.) Max.	hFE Min-Max	PRICE		
						1-99	100-499	500+
4N25-4N33	Photo-Transistors					See Page 17		
MPSA05	123AP	B6	60	.25	50-150	3/1.00	.27	.25
MPSA06	128	B6	80	.25	50-150	3/1.00	.27	.25
TIP29A	152	M9	60	.7	15-150	.65	.48	.39
TIP30A	153	D9	60	.7	15-150	.69	.53	.41
TIP31A	152	M9	60	1.2	10-50	.75	.55	.43
TIP32A	153	D9	60	1.20	10-50	.79	.59	.45
TIP41A	331	M9	60	2.0	15-150	.99	.79	.59
TIP42A	332	D9	-60	-2.0	15-150	1.05	.85	.65
TIP101	---	N9	80	2.0	1K/20K	1.25	.99	.79
TIP102	---	N9	100	2.0	1K/20K	1.49	1.19	.89
TIP106	---	O9	80	2.0	1K/20K	1.39	1.09	.89
TIP120	261	N9	60	3.0	500 min.	.89	.69	.59
TIP125	263	O9	-60	-4.0	1000 min.	.99	.79	.69
TIS97	107	K6	40	1	250-700	4/1.00	.22	.19
TIS98	107	K6	60	1	100-300	4/1.00	.22	.19
2N918	108	C5	15	.4	20	2/1.00	.45	.40
2N2219A	123AP	F2	40	.3	100-200	2/1.00	.40	.35
2N2221A	123AP	F3	40	.3	40-120	3/1.00	.27	.25
PN2222	123AP	F6	40	.3	100-300	6/1.00	.15	.13
2N2222A	123AP	F3	40	.3	100-300	3/1.00	.27	.25
MPS2369	107	H6	15	.25	20-120	4/1.00	.22	.19
2N2484	123AP	K3	60	.35	100-500	4/1.00	.22	.19
2N2906A	159	I3	60	.4	40-120	2/1.00	.45	.40
PN2907	159	I6	60	.4	100-300	6/1.00	.15	.13
2N2907A	159	I3	60	.4	100-300	3/1.00	.27	.25
2N2925	123AP	A6	25	.3	150-300	4/1.00	.22	.19
MJE2955T	183	D9	60	1.1	20-70	1.25	1.15	1.10
2N3053	128	B4	40	1.4	25-150	2/1.00	.45	.40
MJE3055T	182	M9	60V	50W	20hFE	1.00	.92	.85
2N3055	181	M1	60V	115W	20-70	.89	.82	.76
2N3392	123AP	A6	25	---	150-300	4/1.00	.22	.19
2N3398	123AP	A6	25	---	55-800	4/1.00	.22	.19
PN3567	128	B7	40	.25	40-300	3/1.00	.27	.22
PN3568	128	B6	60	.25	40-300	4/1.00	.22	.19
PN3569	128	B6	40	.25	100-300	4/1.00	.22	.19
2N3638A	159	I6	25	.25	20-100	4/1.00	.22	.19

Part No.	Cross-Ref. to ECG	* Type Case	BVCEO Min.	VCE (Sat.) Max.	hFE Min-Max	PRICE		
						1-99	100-499	500+
MPS3640	159	H6	12	.2	30-120	6/1.00	.15	.13
2N3702	159	I6	40	.25	60-300	4/1.00	.22	.19
2N3704	123AP	F6	30	.6	100-300	4/1.00	.22	.19
2N3705	123AP	F6	30	.8	50-150	4/1.00	.22	.19
2N3706	123AP	F6	40	1	30-600	4/1.00	.22	.19
2N3707	123AP	K6	30	1	100-400	4/1.00	.22	.19
2N3711	123AP	K6	30	1	180-660	4/1.00	.22	.19
2N3724	235	G2	30	.25	60-150	.65	.60	.55
2N3725	128	G2	50	.25	60-150	1.00	.89	.79
2N3772	181	M1	150W	30A	15-60	2.25	2.00	1.75
2N3823	133	L3	FET	30V	4-20	1.00	.85	.70
2N3903	123AP	A6	60	.3	50-150	4/1.00	.22	.19
2N3904	123AP	A6	40	.3	100-300	4/1.00	.22	.19
2N3905	159	E6	40	.25	50-150	4/1.00	.22	.19
2N3906	159	E6	40	.25	100-300	4/1.00	.22	.19
2N4013	123AP	G3	30	.25	30-150	.65	.60	.55
2N4123	123AP	A6	30	.3	50-150	4/1.00	.22	.19
PN4249	159	J8	60	.25	100-300	4/1.00	.22	.19
2N4400	123AP	F6	40	.4	50-150	4/1.00	.22	.19
2N4401	123AP	F6	40	.4	100-300	4/1.00	.22	.19
2N4402	159AP	I6	40	.4	50-150	4/1.00	.22	.19
2N4403	159AP	I6	40	.4	50-150	4/1.00	.22	.19
2N4409	194	K6	50	.2	60-400	4/1.00	.22	.19
2N5086	159	J6	50	.3	150-500	4/1.00	.22	.19
2N5087	159	J6	50	.3	250-800	4/1.00	.22	.19
2N5088	123AP	K6	30	.5	300-900	4/1.00	.22	.19
2N5089	123AP	K6	35	.5	400-1200	4/1.00	.22	.19
2N5129	128	A6	12	.25	20-250	4/1.00	.22	.19
PN5134	123AP	H6	10	.25	20-150	4/1.00	.22	.19
PN5138	159	E6	30	.3	50-800	4/1.00	.22	.19
2N5139	193	E8	20	.5	40-350	4/1.00	.22	.19
2N5210	123	K6	50	.7	200-600	4/1.00	.22	.19
2N5771	194	H6	4.5	.18	50-120	3/1.00	.29	.25
2N5951	312	L6	FET	30V	360-500	2/1.00	.45	.40
40409	128	M2	90V	3W	---	1.75	1.65	1.55
40410	129	D2	90V	3W	---	1.75	1.65	1.55
40673	222	L3	MOS FET			1.75	1.65	1.55

## \*TYPE / CASE CODE

A	NPN General Purpose Amp and Switch to 100mA
B	NPN Medium Power Amp and Switch
C	NPN General Purpose High Frequency
D	PNP Power Transistor
E	PNP General Purpose Amp and Switch to 100mA
F	NPN General Purpose Amp and Switch to 500mA
G	Switch to 1 Amp
H	NPN Saturated Switch to 100mA
I	PNP General Purpose Amp and Switch to 500mA
J	PNP Low Level — High Gain 50-100mA
K	NPN Low Noise — Low Level — High Gain to 100mA
L	Field Effect Transistors (N Channel)
M	NPN Power Transistor
N	NPN Power Darlington
O	PNP Power Darlington

1	.....	TO-3	CASE
2	.....	TO-5	CASE
3	.....	TO-18	CASE
4	.....	TO-39	CASE
5	.....	TO-72	CASE
6	.....	TO-92	CASE
7	.....	TO-105	CASE
8	.....	TO-106	CASE
9	.....	TO-220	CASE

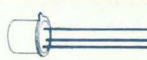


# DIODES

	TYPE	Cross-Ref. to ECG	V <sub>Z</sub> VOLTS	W	I <sub>ZT</sub> mA	Z <sub>T</sub> @I <sub>ZT</sub> Ohms	PRICE		
							1-99	100-499	500-999
<b>ZENER DIODES DO-35 CASE</b>	1N746	5005A	3.3	400m	20	28	4/1.00	.21	.18
	1N751	5010A	5.1	400m	20	17	4/1.00	.21	.18
	1N752	136A	5.6	400m	20	11	4/1.00	.21	.18
	1N753	5013A	6.2	400m	20	7	4/1.00	.21	.18
	1N754	140A	6.8	400m	20	5	4/1.00	.21	.18
	1N757	5018A	9.0	400m	20	6	4/1.00	.21	.18
	1N759	5021A	12.0	400m	20	30	4/1.00	.21	.18
	1N959	5016A	8.2	400m	20	15	4/ .79	.17	.15
	1N965	5024A	15.0	400m	8.5	16	4/ .79	.17	.15
	1N5232	5011A	5.6	500m	20	11	4/1.00	.23	.20
	1N5234	5013A	6.2	500m	20	7	4/1.00	.23	.20
	1N5235	5014A	6.8	500m	20	5	4/1.00	.23	.20
	1N5236	5015A	7.5	500m	20	6	4/1.00	.23	.20
	1N5242	5021A	12.0	500m	20	30	4/1.00	.23	.20
	1N5245	5024A	15.0	500m	8.5	16	4/1.00	.23	.20
<b>1 WATT ZENER DO-41 CASE</b>	1N4733	135A	5.1	1w	49	7	4/1.00	.23	.20
	1N4734	136A	5.6	1w	45	5	4/1.00	.23	.20
	1N4735	137A	6.2	1w	41	2	4/1.00	.23	.20
	1N4736	5071A	6.8	1w	37	3.5	4/1.00	.23	.20
	1N4738	5072A	8.2	1w	31	4.5	4/1.00	.23	.20
	1N4742	142A	12.0	1w	21	9	4/1.00	.23	.20
	1N4744	145A	15.0	1w	17	14	4/1.00	.23	.20

 DO-41 Case

 AXIAL

 TO-5/3 Case

 TO-220 Case

 DO-5 Case

 179-01 Case

SWITCHING DIODE	TYPE	Cross-Ref. to ECG	PIV V	if A	CASE	PRICE			
						1-99	100-499	500-999	
	1N3600	519	50	200m	DO-35	} Similar to DO-41	6/ .59	.08	.06
	1N4148 (1N914)	519	75	10m	DO-35		15/1.00	.06	.05
	1N4154	519	35	10m	DO-35		12/1.00	.07	.06
General Purpose DIODE	1N456	177	25	40m	DO-7	} Similar to DO-41	6/1.00	.14	.12
	1N458	177	150	7m	DO-7		6/1.00	.14	.12
	1N485	177	180	10m	DO-7		5/ .89	.15	.12
1 AMP / 3 AMP SILICON RECTIFIERS	1N4001	116	50PIV	1 AMP	DO-41		12/1.00	.07	.06
	1N4002	116	100PIV	1 AMP	DO-41		12/1.09	.08	.06
	1N4003	116	200PIV	1 AMP	DO-41		12/1.19	.09	.07
	1N4004	116	400PIV	1 AMP	DO-41		12/1.29	.10	.08
	1N4005	116	600PIV	1 AMP	DO-41		10/1.09	.10	.08
	1N4006	125	800PIV	1 AMP	DO-41		10/1.19	.11	.09
	1N4007	125	1000PIV	1 AMP	DO-41		10/1.29	.12	.10
	1N5400	5800	50PIV	3 AMP	Axial		3/ .59	.17	.15
	1N5401	156	100PIV	3 AMP	Axial		3/ .69	.20	.18
	1N5402	5802	200PIV	3 AMP	Axial		3/ .79	.23	.21
	1N5404	5804	400PIV	3 AMP	Axial		3/ .89	.27	.24
	1N5406	5806	600PIV	3 AMP	Axial		3/1.09	.30	.27
	1N5408	5809	1000PIV	3 AMP	Axial		3/1.29	.35	.29
12 AMP / 35 AMP STUD RECTIFIERS	1N1183	5980	50PIV	35 AMP	DO-5		1.60	1.30	1.10
	1N1184	5982	100PIV	35 AMP	DO-5		1.70	1.40	1.20
	1N1185	5986	150PIV	35 AMP	DO-5		1.80	1.50	1.30
	1N1186	5986	200PIV	35 AMP	DO-5		1.90	1.60	1.40
	1N1188	5990	400PIV	35 AMP	DO-5		3.00	2.30	1.95
	1N1199A	5870	50PIV	12 AMP	DO-4	} Similar to DO-5	.79	.69	.59
	1N1200A	5872	100PIV	12 AMP	DO-4		.99	.89	.79
	1N1202A	5874	200PIV	12 AMP	DO-4		1.29	1.19	.99
	1N1204A	5878	400PIV	12 AMP	DO-4		1.49	1.35	1.19
	1N1204AR*	5879	400PIV	12 AMP	DO-4		1.59	1.45	1.29
*Reverse Polarity									
Silicon Controlled Rectifier (SCR) FW BRIDGE RECTIFIERS AND TRIACS	C106B1	5455	200V	3.6A	SCR (2N6239)	TO-202	.50	.40	.35
	C38B	5543	200V	35A	SCR (2N3898)	DO-5	1.49	1.29	1.09
	C38M	5547	600V	35A	SCR (2N3899)	DO-5	2.25	1.95	1.75
	C122B	5463	200V	8A	SCR	TO-220	1.05	.90	.75
	C122D	5465	400V	8A	SCR	TO-220	1.25	1.10	.95
	C122M		600V	8A	SCR	TO-220	1.85	1.70	1.55
	2N2328		300V	1.6A	SCR	TO-5/3	.50	.40	.35
	MDA 980-1		50V	12A	FW Bridge Rec.	179-01	1.95	1.65	1.45
	MDA 980-3	5322	200V	12A	FW Bridge Rec.	179-01	2.25	1.95	1.75
	MDA 2506		600V	25A	FW Bridge Rec.	308A-3	2.49	2.25	1.95
	SC146B	5633	200V	10A	TRIAC (2N6342)	TO-220	1.25	1.10	.95
	SC146D	5635	400V	10A	TRIAC (2N6343)	TO-220	1.80	1.65	1.50
	SC146M		600V	10A	TRIAC (2N6344)	TO-220	2.50	2.25	2.00

\*Reverse Polarity



# CARBON FILM RESISTORS

## STANDARD 1/4 WATT RESISTANCE VALUES 5%

OHMS	OHMS	OHMS	OHMS	OHMS	OHMS	OHMS	OHMS	OHMS	OHMS
2.2	11	51	240	1.1K	5.1K	24K	110K	510K	2.4M
2.4	12	56	270	1.2K	5.6K	27K	120K	560K	2.7M
2.7	13	62	300	1.3K	6.2K	30K	130K	620K	3.0M
3.0	15	68	330	1.5K	6.8K	33K	150K	680K	3.3M
3.3	16	75	360	1.6K	7.5K	36K	160K	750K	3.6M
3.6	18	82	390	1.8K	8.2K	39K	180K	820K	3.9M
3.9	20	91	430	2.0K	9.1K	43K	200K	910K	4.3M
4.3	22	100	470	2.2K	10K	47K	220K	1.0M	4.7M
4.7	24	110	510	2.4K	11K	51K	240K	1.1M	5.1M
5.1	27	120	560	2.7K	12K	56K	270K	1.2M	5.6M
5.6	30	130	620	3.0K	13K	62K	300K	1.3M	6.2M
6.2	33	150	680	3.3K	15K	68K	330K	1.5M	6.8M
6.8	36	160	750	3.6K	16K	75K	360K	1.6M	7.5M
7.5	39	180	820	3.9K	18K	82K	390K	1.8M	8.2M
8.2	43	200	910	4.3K	20K	91K	430K	2.0M	9.1M
9.1	47	220	1.0K	4.7K	22K	100K	470K	2.2M	10M
10									

**MUST BE ORDERED IN INCREMENTS OF 5 EACH PER VALUE**

		QUANTITY	PRICING
5 PIECES PER VALUE	*ALL VALUES MIXED IN ONE PACKAGE UNLESS OTHERWISE SPECIFIED	5 to 495 pieces	\$.06 each
		500 to 995 pieces	\$.05 each
		1000 or more pieces	\$.04 each
		*INDIVIDUAL PACKAGING FOR LESS THAN 100 PIECES — \$.05 PER VALUE	
100 PIECES PER VALUE	COST INCLUDES INDIVIDUAL PACKAGING PER VALUE	100 to 2400 pieces	\$2.50 per 100
		2500 to 4900 pieces	\$2.00 per 100
		5000 or more pieces	\$1.80 per 100
1000 PIECES PER VALUE	COST INCLUDES INDIVIDUAL PACKAGING PER VALUE	1000 to 9000 pieces	\$14.00 per 1000
		10,000 to 24,000 pieces	\$13.00 per 1000
		25,000 or more pieces	\$12.00 per 1000

— VALUES MAY BE COMBINED (IN EACH SECTION ONLY) FOR THE BEST QUANTITY PRICE —

## RESISTOR ASSORTMENTS 50-Piece — 1/4 Watt — 5%

Part No.		Price
<b>ASST. 1</b>	5 each 10 OHM — 12 OHM — 15 OHM — 18 OHM — 22 OHM 27 OHM — 33 OHM — 39 OHM — 47 OHM — 56 OHM	<b>\$1.95</b>
<b>ASST. 2</b>	5 each 68 OHM — 82 OHM — 100 OHM — 120 OHM — 150 OHM 180 OHM — 220 OHM — 270 OHM — 330 OHM — 390 OHM	<b>\$1.95</b>
<b>ASST. 3</b>	5 each 470 OHM — 560 OHM — 680 OHM — 820 OHM — 1K 1.2K — 1.5K — 1.8K — 2.2K — 2.7K	<b>\$1.95</b>
<b>ASST. 4</b>	5 each 3.3K — 3.9K — 4.7K — 5.6K — 6.8K 8.2K — 10K — 12K — 15K — 18K	<b>\$1.95</b>
<b>ASST. 5</b>	5 each 22K — 27K — 33K — 39K — 47K 56K — 68K — 82K — 100K — 120K	<b>\$1.95</b>
<b>ASST. 6</b>	5 each 150K — 180K — 220K — 270K — 330K 390K — 470K — 560K — 680K — 820K	<b>\$1.95</b>
<b>ASST. 7</b>	5 each 1M — 1.2M — 1.5M — 1.8M — 2.2M 2.7M — 3.3M — 3.9M — 4.7M — 5.6M	<b>\$1.95</b>

**ASST. 8R 350 pcs. Includes Assortments 1-7 shown above ..... \$9.95**  
(Each Assortment is individually packaged)  
(Regular Price \$13.65 — SAVE \$3.70)

## STANDARD RESISTOR COLOR CODE

### COLOR BAND SYSTEM



Tolerance on:  
No. 4 band

No Band,  $\pm 20\%$   
Silver,  $\pm 10\%$   
Gold,  $\pm 5\%$

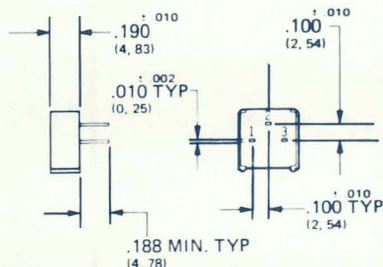
1st and 2nd Band	3rd Band																						
0 Black	<table><tr><th colspan="2">MULTIPLIER</th></tr><tr><th>Color</th><th>Multiplier</th></tr><tr><td>Black</td><td>1</td></tr><tr><td>Brown</td><td>10</td></tr><tr><td>Red</td><td>100</td></tr><tr><td>Orange</td><td>1,000</td></tr><tr><td>Yellow</td><td>10,000</td></tr><tr><td>Green</td><td>100,000</td></tr><tr><td>Blue</td><td>1,000,000</td></tr><tr><td>Silver</td><td>0.01</td></tr><tr><td>Gold</td><td>0.1</td></tr></table>	MULTIPLIER		Color	Multiplier	Black	1	Brown	10	Red	100	Orange	1,000	Yellow	10,000	Green	100,000	Blue	1,000,000	Silver	0.01	Gold	0.1
MULTIPLIER																							
Color		Multiplier																					
Black		1																					
Brown		10																					
Red		100																					
Orange		1,000																					
Yellow		10,000																					
Green		100,000																					
Blue		1,000,000																					
Silver	0.01																						
Gold	0.1																						
1 Brown																							
2 Red																							
3 Orange																							
4 Yellow																							
5 Green																							
6 Blue																							
7 Violet																							
8 Grey																							
9 White																							



## VARIABLE RESISTORS

## MODEL 63P — Single Turn — Linear Taper

1/2 Watt @ 70°C — PC Pins: .100" grid (2.54mm) (TO-5 Grid) Top Adjustment  
Equal to 72PR, 840P and 3386P (—55°C to +125°C) ± 10% Tolerance



### STANDARD RESISTANCE VALUES

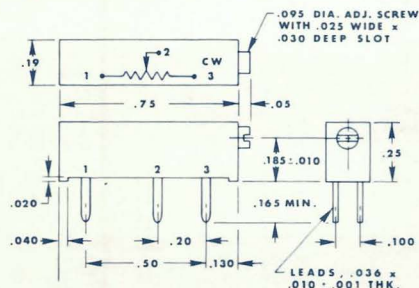
— Please Specify Value When Ordering —

50Ω 100Ω 500Ω 1K 2K 5K 10K 20K 50K 100K 200K 500K 1Meg

PART NO.	RESISTANCES (OHMS)	1-24	25-99	100 +
63P-(value)	50Ω — 1 Meg	\$1.10	\$.99	\$.89

## MODEL 43P — 15 Turn — Linear Taper

**3/4 Watt @ 70°C — PC Pins: .100" grid (2.54mm) — Side Adjustment**  
**Equal to 89PR, 830P and 3006P (–55°C to +125°C) ± 10% Tolerance**



### STANDARD RESISTANCE VALUES

— Please Specify Value When Ordering —

50Ω 100Ω 500Ω 1K 2K 5K 10K 20K 50K 100K 200K 500K 1M $\Omega$

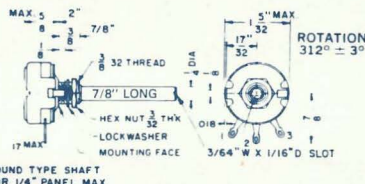
PART NO.	RESISTANCES (OHMS)	1-24	25-99	100 +
43P-(value)	50 $\Omega$ — 1 Meg	\$1.19	\$1.09	\$.99

## 2 Watt Linear Taper Potentiometer

**7/8" Slotted Shaft (CMW) 2W @ 70°C Ambient — ±10% Tolerance**  
**Meets MIL-R-94 (–55°C to +120°C)**



PART NO.	MILITARY NO.	OHMS	1-24	25-99
CMU1021	RV4N-AYSD-102A	1K	\$2.95	\$2.69
CMU5021	RV4N-AYSD-502A	5K	\$2.95	\$2.69
CMU1031	RV4N-AYSD-103A	10K	\$2.95	\$2.69
CMU2531	RV4N-AYSD-253A	25K	\$2.95	\$2.69
CMU5031	RV4N-AYSD-503A	50K	\$2.95	\$2.69
CMU1041	RV4N-AYSD-104A	100K	\$2.95	\$2.69
CMU1052	RV4N-AYSD-105A	1MEG	\$2.95	\$2.69



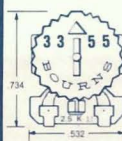
## TR11 .20 Watt Trimmer

### STANDARD RESISTANCE VALUES

— Please Specify Values When Ordering —

100Ω 500Ω 1K 2K 5K 10K 20K 50K 100K 200K 1Meg

Part No.	Resistances (Ohms)	1-99	100 +
TR11-(value)	100 $\Omega$ — 1 Meg	\$.39	\$.29



3 PINS  
HORIZONTAL  
MOUNTING

## Bourns Potentiometers

1/4 Watt — Single Turn — Top Adjustment  $\pm 20\%$   
Pin Spacing .172  $\pm$  .01 (2 places) .344 overall

### STANDARD RESISTANCE VALUES

— Please Specify Values When Ordering —

500Ω 1K 2.5K 5K 10K 25K 50K 100K 250K 500K 5Meg

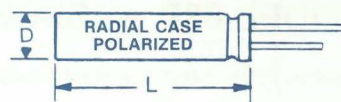
Part No.	Resistances (Ohms)	1-99	100 +
Bourns 3355	500 $\Omega$ — 5Meg	\$.29	\$.25

GB174	25 each Assorted Values	\$2.00
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# CAPACITORS

## ELECTROLYTIC — MINIATURE ALUMINUM



APPROXIMATE DIMENSIONS

Capacitance MFD	Working DC Voltage	Surge DC Voltage	Case	L	D	PART NO.	1-99	100-499	500+
.47*	50	63	Axial	.492"	.205"	A.47/50	.16	.14	.10
1	16	20	Axial	.488"	.205"	A1/16	.17	.14	.10
1	25	32	Axial	.488"	.205"	A1/25	.18	.15	.11
1*	50	63	Axial	.488"	.205"	A1/50	.19	.16	.12
3.3*	50	63	Axial	.488"	.205"	A3.3/50	.17	.15	.11
4.7	16	20	Axial	.492"	.205"	A4.7/16	.17	.14	.10
4.7	25	32	Axial	.488"	.205"	A4.7/25	.18	.15	.11
4.7*	50	63	Axial	.622"	.323"	A4.7/50	.19	.16	.12
10	16	20	Axial	.492"	.244"	A10/16	.17	.14	.10
10	25	32	Axial	.492"	.244"	A10/25	.18	.15	.11
10*	50	63	Axial	.622"	.323"	A10/50	.19	.16	.12
22	16	20	Axial	.492"	.244"	A22/16	.18	.15	.11
22	25	32	Axial	.622"	.323"	A22/25	.19	.16	.12
22*	50	63	Axial	1.024"	.402"	A22/50	.24	.20	.18
47	16	20	Axial	.622"	.323"	A47/16	.24	.20	.18
47	25	32	Axial	1.004"	.402"	A47/25	.25	.21	.19
47*	50	63	Axial	1.240"	.520"	A47/50	.29	.25	.23
100	16	20	Axial	1.004"	.402"	A100/16	.24	.20	.18
100	25	32	Axial	1.004"	.402"	A100/25	.28	.24	.22
100*	50	63	Axial	1.240"	.520"	A100/50	.41	.37	.34
220	16	20	Axial	1.004"	.402"	A220/16	.35	.30	.28
220	25	32	Axial	1.240"	.520"	A220/25	.39	.34	.33
220*	50	63	Axial	1.240"	.717"	A220/50	.49	.45	.41
470	16	20	Axial	1.240"	.520"	A470/16	.45	.41	.37
470	25	32	Axial	1.240"	.638"	A470/25	.54	.49	.45
470*	50	63	Axial	1.949"	.717"	A470/50	.85	.75	.65
1000	16	20	Axial	1.240"	.638"	A1000/16	.79	.69	.61
1000*	25	32	Axial	1.437"	.717"	A1000/25	.85	.75	.65
2200*	16	20	Axial	1.594"	.717"	A2200/16	.89	.79	.69
.47	25	32	Radial	.413"	.205"	R.47/25	.15	.13	.12
.47**	50	63	Radial	.413"	.205"	R.47/50	.16	.14	.13
1	16	20	Radial	.413"	.205"	R1/16	.15	.13	.12
1	25	32	Radial	.413"	.205"	R1/25	.16	.14	.13
1**	50	63	Radial	.413"	.205"	R1/50	.17	.15	.14
4.7	16	20	Radial	.413"	.205"	R4.7/16	.15	.13	.12
4.7	25	32	Radial	.413"	.205"	R4.7/25	.16	.14	.13
4.7**	50	63	Radial	.417"	.283"	R4.7/50	.17	.15	.14
10	16	20	Radial	.417"	.244"	R10/16	.15	.13	.12
10	25	32	Radial	.417"	.244"	R10/25	.16	.14	.13
10**	50	63	Radial	.512"	.323"	R10/50	.17	.15	.14
47**	50	63	Radial	.807"	.520"	R47/50	.25	.21	.19
100	16	20	Radial	.512"	.402"	R100/16	.21	.17	.14
100	25	32	Radial	.787"	.402"	R100/25	.25	.23	.21
100**	50	63	Radial	1.240"	.520"	R100/50	.37	.34	.31
220**	16	20	Radial	.669"	.520"	R220/16	.25	.21	.19
470**	25	32	Radial	.984"	.630"	R470/25	.35	.31	.27
1000**	16	20	Radial	1.240"	.520"	R1000/16	.55	.50	.45

### AXIAL ELECTROLYTIC CAPACITOR ASSORTMENT — 60 PIECES

(5 each of 12 values as marked [\*] above) — Individually packaged

REGULAR PRICE: \$24.60 — SAVE \$9.65 (39% SAVINGS) ..... **AXIAL 60 — \$14.95**

### RADIAL ELECTROLYTIC CAPACITOR ASSORTMENT — 45 PIECES

(5 each of 9 values as marked [\*\*] above) — Individually packaged

REGULAR PRICE: \$12.20 — SAVE \$4.25 (35% SAVINGS) ..... **RADIAL 45 — \$ 7.95**



# CAPACITORS

## DIPPED TANTALUM CAPACITORS

± 20% Dipped (Solid) Polarized

Part No.	Value	Volts	1-9	10-99	100+
*TM .1/35	.1mf	35V	.29	.24	.19
*TM .15/35	.15mf	35V	.29	.24	.19
*TM .22/35	.22mf	35V	.29	.24	.19
*TM .33/35	.33mf	35V	.29	.24	.19
*TM .47/35	.47mf	35V	.29	.24	.19
*TM .68/35	.68mf	35V	.29	.24	.19
*TM 1/35	1 mf	35V	.29	.24	.19
*TM 1.5/35	1.5mf	35V	.29	.24	.19
*TM 2.2/35	2.2mf	35V	.32	.26	.21
TM 3.3/25	3.3mf	25V	.35	.29	.23
*TM 3.3/35	3.3mf	35V	.45	.39	.31
TM 4.7/25	4.7mf	25V	.45	.39	.31
*TM 4.7/35	4.7mf	35V	.45	.39	.31
*TM 6.8/25	6.8mf	25V	.45	.39	.31
TM 10/25	10mf	25V	.65	.55	.45
*TM 10/35	10mf	35V	.95	.79	.65
TM 15/25	15mf	25V	1.19	1.05	.85
TM 22/6	22mf	6V	.59	.49	.39
TM 33/25	33mf	25V	2.95	2.49	1.95
TM 47/25	47mf	25V	3.99	3.49	2.89
TM 100/6	100mf	6V	2.49	2.09	1.69

**TANTALUM CAPACITOR ASSORTMENT — 65 PIECES**  
(5 ea. 13 values as marked [\*] above) individually packaged.

Reg. Price \$24.70 — SAVE \$4.75 #TANT-65 \$19.95

### CAPACITOR CODE

1 0 4 = 100000 pf or .1 mfd  
(move decimal 6 places to left to convert to microfarads)  
Multiplier (add zeros to get value in picofarads)  
2nd Sig. Fig.  
1st Sig. Fig.

## DISC CAPACITORS

+80 — 20% Ceramic

Part No.	Value	Volts	1-9	10-99	100+
DC 10/50	10pf	50V	.08	.06	.05
DC 22/50	22pf	50V	.08	.06	.05
DC 39/50	39pf	50V	.08	.06	.05
DC 47/50	47pf	50V	.08	.06	.05
DC 68/50	68pf	50V	.08	.06	.05
DC 100/50	100pf	50V	.08	.06	.05
DC 220/50	220pf	50V	.08	.06	.05
DC 330/50	330pf	50V	.08	.06	.05
DC 470/50	470pf	50V	.08	.06	.05
DC .001/50	.001mf	50V	.08	.06	.05
DC .0047/50	.0047mf	50V	.08	.06	.05
DC .01/50	.01mf	50V	.08	.06	.05
DC .022/50	.022mf	50V	.09	.07	.06
DC .033/50	.033mf	50V	.09	.07	.06
DC .047/50	.047mf	50V	.09	.07	.06
DC .1/12	.1mf (Bypass)	12V	.12	.10	.08
DC .1/50	.1mf	50V	.15	.12	.10

**DISC CAPACITOR ASSORTMENT — 170 PIECES**  
(10 ea. 17 values as listed above) individually packaged

Reg. Price \$11.50 — SAVE \$3.55 #DISC-170 \$7.95

## MYLAR CAPACITORS

± 10% Polyester Film

Part No.	Value	Volts	1-9	10-99	100+
MY.001/100	.001 mf	100V	.12	.10	.07
MY.0015/100	.0015mf	100V	.12	.10	.07
MY.0022/100	.0022mf	100V	.12	.10	.07
MY.0047/100	.0047mf	100V	.12	.10	.07
MY.01/100	.01mf	100V	.12	.10	.07
MY.022/100	.022mf	100V	.13	.11	.08
MY.033/100	.033mf	100V	.17	.14	.11
MY.047/100	.047mf	100V	.21	.17	.13
MY.1/100	.1mf	100V	.27	.23	.17
MY.22/100	.22mf	100V	.33	.27	.22
MY.33/100	.33mf	100V	.39	.32	.26
MY.47/100	.47mf	100V	.45	.37	.31

### MYLAR CAPACITOR ASSORTMENT — 120 PIECES

(10 ea. of 12 values as listed above) individually packaged.

Reg. Price \$21.10 — SAVE \$6.15 #MYLAR-120 \$14.95

## SILVER DIPPED MICA CAPACITORS

DM15 Series ± 5% Tolerance (CM05 Mil. Style)

Part No.	Value	Volts	1-9	10-99	100+
*DM15-100J	10pf	500V	.35	.30	.25
*DM15-220J	22pf	500V	.35	.30	.25
DM15-270J	27pf	500V	.35	.30	.25
*DM15-330J	33pf	500V	.35	.30	.25
*DM15-470J	47pf	500V	.35	.30	.25
DM15-560J	56pf	500V	.35	.30	.25
*DM15-680J	68pf	500V	.35	.30	.25
DM15-820J	82pf	500V	.35	.30	.25
*DM15-101J	100pf	500V	.35	.30	.25
DM15-121J	120pf	500V	.42	.37	.32
*DM15-221J	220pf	500V	.49	.42	.35
DM15-271J	270pf	500V	.55	.50	.45
DM15-331J	330pf	500V	.59	.52	.45
*DM15-471J	470pf	500V	.60	.55	.50
DM15-561J	560pf	300V	.62	.57	.52
*DM15-681J	680pf	300V	.65	.60	.55
DM15-821J	820pf	300V	.80	.75	.70
*DM15-102J	1000pf	100V	.75	.67	.59

### MICA CAPACITOR ASSORTMENT — 50 PIECES

(5 ea. of 10 values as marked [\*] above) individually packaged

Reg. Price \$22.90 — SAVE \$7.95 #MICA-50 \$14.95

## TRIMMER CAPACITORS

Ceramic

Part No.	Value	Price
TC 2-8	2-8pf	2/1.49
TC 3-12	3-12pf	2/1.49
TC 3-23	3-23pf	2/1.49
TC 4-34	4-34pf	2/1.49
TC 6-70	6-70pf	2/1.49

### TRIMMER CAPACITOR ASSORTMENT — 10 PIECES

(2 each of 5 values as listed above) individually packaged.

Reg. Price \$7.45 — SAVE \$1.96 #TRIMMER-10 \$5.49



# ORDERING INSTRUCTIONS



**(415) 592-8097**  
TELEX 176043

## TERMS . . . Domestic:

Prepaid, C.O.D. or approved open account.  
Net 30 days, F.O.B. shipping point. See detailed instructions below.

## Foreign:

Prepaid only. U.S. Funds - money order or cashier's check only.  
See detailed instructions below.

— TO EXPEDITE ORDERS, PLEASE USE CUSTOMER NUMBER AS SHOWN ON CATALOG MAILING LABEL OR RECENT INVOICE —

CATALOG	Future mailings and special sale flyers will be limited to active buying customers only. FREE catalogs will otherwise be available upon written request by sending \$1.00 to cover postage.
C.O.D.	Acceptable by telephone or mail. Payment from customer will be by cash, money order or company check. We cannot accept personal checks as payment on C.O.D. parcels.
CONFIRMING ORDERS	We would prefer that confirming orders not be sent after a telephone order has been placed. If company policy necessitates a confirming order, please mark "confirming" boldly on the order. If problems or duplicate shipments occur due to an order which is not properly marked, customers will be held responsible for any charges incurred, plus a 15% restock charge on returned parts.
CREDIT CARDS	Due to the added expense to both customer and Jameco, we do not accept any credit cards.
CUSTOMER NUMBER	A computerized customer number is issued to all persons receiving orders from Jameco. This number will be shown on your catalog mailing label or on a recent invoice. Please use your number when placing orders or making inquiries regarding previous orders to expedite handling.
DATA SHEETS	Data sheets are available on most devices. Please include \$.30 for each data sheet requested.
DEFECTIVE MATERIAL	All claims for defective material must be made within sixty (60) days after receipt of parcel. All claims must include the defective material (for testing purposes), our invoice number, and the date of purchase.
DELIVERY	Orders are normally shipped within 48 hours after receipt of customer's order. If a part is on backorder, customer will be advised immediately. Our normal shipping method is via First Class Mail or UPS depending on size and weight of parcel. If you have a preference, please specify.
FOREIGN ORDERS	All foreign orders must be prepaid with cashier's check or money order in U.S. funds <b>ONLY</b> due to the banking problems with the currency exchange. C.O.D. is not available to any foreign countries and <b>LETTERS OF CREDIT</b> are not an acceptable form of payment. Further information is available upon request.
HOURS	<b>NEW HOURS:</b> Monday through Friday (excluding holidays) 7:00 A.M. — 5:00 P.M. PST
INSURANCE	<b>Domestic:</b> Please include \$1.50 additional fee if you wish to insure your order. We are not responsible for uninsured parcels. <b>Foreign:</b> Please include \$2.00 additional fee. There are strict postal regulations regarding insurance to foreign countries. We cannot guarantee that your fee will insure where service is not allowed. <b>WE ARE NOT RESPONSIBLE FOR UNINSURED PARCELS.</b> <b>Canada:</b> Please include \$3.00 additional fee. Insurance available only on Parcel Post shipments. <b>Mexico:</b> <b>THERE IS NO INSURANCE AVAILABLE IN MEXICO.</b>
MINIMUM ORDER	\$10.00 is the minimum order.
OPEN ACCOUNT	We must have an approved credit application on file and/or have a qualifying Dunn & Bradstreet rating from our credit department prior to any shipment of open account orders. Normal credit approval on an application takes four (4) weeks. Government and accredited schools, with authorized purchase orders, will be excepted. All orders are net 30 days, F.O.B. shipping point.
ORDER FORMS	New order forms are included with each order for your convenience. Additional forms are available on request.
POSTAGE	<b>Domestic:</b> Add 5% of total order (minimum postage \$1.00) to cover cost of shipping. This fee does not include insurance. <b>Canada or Mexico:</b> Add 5% of total order (minimum postage \$1.00) to cover cost of shipping. This fee does not include insurance. <b>Foreign:</b> Add 20% of total order (minimum postage \$2.00). This fee does not include insurance. <b>ANY EXCESS POSTAGE WILL BE REFUNDED</b>
PREPAID ORDERS	Order must be accompanied by check or money order.
PRICES	Prices are subject to change without prior notice.
RESTOCK CHARGE	If parts are to be returned to Jameco due to customer error, customer will be held responsible for all extra fees, plus a 15% restock charge on all returned parts.
SALES TAX	6½ % tax must be charged to all orders delivered in California. Persons having a current California Resale Card on file with Jameco will be exempt from sales tax.
SHORTAGE/DAMAGE	All claims for shortages or damages must be made within ten (10) days after receipt of parcel. Claims must include our invoice number and the date of purchase. Customers that do not notify us of problems with an order within this time period, will be held responsible for the entire order as we will consider the order complete.
TELEX	Quotes or information: Telex Number 176043
WILL CALL SERVICE	Available Monday thru Friday (excluding holidays) 8:00 A.M. to 5:00 P.M. Orders must be placed one hour prior to pick up so we may process the necessary paperwork.



# ORDER FORM

**\$10.00 Minimum Order**

1355 SHOREWAY ROAD • BELMONT, CA 94002



1983 CATALOG  
For Faster Ordering,  
Call: (415) 592-8097  
Telex: 176043  
Monday thru Friday  
7:00AM—5:00PM P.S.T.

Item No.	QTY.	PART NUMBER	DATA SHEETS	PRICE EACH	AMOUNT EXTENDED
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

DATA SHEETS (Add 30¢ per Data Sheet) TOTAL DATA SHEETS  @ 30¢ each

<b>Domestic Orders:</b> United States, Canada & Mexico	Postage: 5% of total order (\$1.00 minimum). Excess will be refunded Insurance: \$1.50 (not responsible for uninsured parcels) Sales Tax: 6½% (California residents only)	<b>SUB-TOTAL</b>	
		SUB-TOTAL Back Page	
<b>Foreign Orders:</b>	Postage: 20% of total order (\$2.00 min). Excess will be refunded. Insurance: \$2.00 (only where postal regulations allow.) Not responsible for uninsured parcels. Payment: Cashier's Check or Money Order only (U.S. funds only)	*TAX 6½% (CA only)	
		Postage (\$1.00 min.)	
Please Ship My Order:	<input type="checkbox"/> Prepaid (check enclosed) <input type="checkbox"/> C.O.D. <input type="checkbox"/> Net 30 days (acct. must be previously established)	Insurance	
		TOTAL	

**SORRY—WE DO NOT ACCEPT CREDIT CARDS**

NAME	CITY		
STREET	STATE	ZIP CODE	
JAMECO Catalog and Sale Flyer mailings will be limited to active buying customers only.		CUSTOMER NUMBER #	



Item No.	QTY.	PART NUMBER	Data Sheets	PRICE EACH	AMOUNT EXTENDED
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
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51					
52					
53					
54					



— ENCLOSE COMPLETED ORDER FORM WITH PAYMENT —

### ADDRESS CHANGE

CUSTOMER NUMBER

NAME

STREET ADDRESS

CITY

STATE

ZIP

**Enclosed is \$1.00 for Postage and Handling—  
PLEASE SEND A CATALOG TO:**

NAME

STREET ADDRESS

CITY

STATE

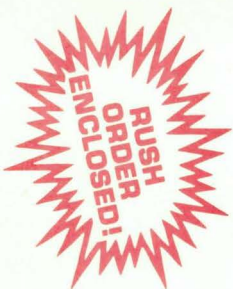
ZIP



FROM: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



**1983  
CATALOG**



1355 SHOREWAY ROAD  
BELMONT, CALIFORNIA 94002







1355 Shoreway Road  
Belmont, CA 94002

# ORDER FORM

## \$10.00 Minimum Order



**1983 Catalog Order Form**  
For Faster Ordering,  
Call: 415-592-8097  
Monday thru Friday  
7:00AM—5:00PM P.S.T.

PRICES TAKEN FROM: ☐ 1983 JAMECO CATALOG ☐ MAGAZINE: \_\_\_\_\_ ☐ FLYER NO. \_\_\_\_\_

Item No.	QTY.	PART NUMBER	DATA SHEETS	PRICE EACH	AMOUNT EXTENDED
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					

DATA SHEETS (Add \$.30 per Data Sheet)

TOTAL DATA SHEETS

@.30 each

**DOMESTIC ORDERS:**

UNITED STATES,  
CANADA & MEXICO

Postage: 5% of total order (\$1.00 minimum) Excess will be refunded  
Insurance: \$1.50 (not responsible for uninsured parcels)  
\*Tax: 6 1/2 % Calif. Residents Only

Sub-Total  
FRONT

Sub-Total  
BACK

\*TAX — 6 1/2 %  
(Calif. Res. Only)

Postage

Insurance

TOTAL

**FOREIGN ORDERS:**

Postage: 20% of total order (\$2.00 minimum) Excess will be refunded  
Insurance: \$2.00 (only where postal regulations allow).  
Not responsible for uninsured parcels.

Payment: Cashier's Check or Money Order only (U.S. funds only)

**Please Ship My Order:**

☐ Prepaid (Check enclosed) ☐ C.O.D.  
☐ Net 30 Days (Account must be previously established)

**SORRY — WE DO NOT ACCEPT CREDIT CARDS**

CUSTOMER NO. (See catalog mailing label)

PURCHASE ORDER NUMBER

NAME

NAME

SHIP TO ADDRESS:

BILL TO ADDRESS:

CITY

CITY

STATE

ZIP CODE

STATE

ZIP CODE

PHONE NUMBER

PHONE NUMBER

**JAMECO Catalog and Sale Flyer mailings will be limited to active buying customers only.**



# CONSUMER PRODUCTS

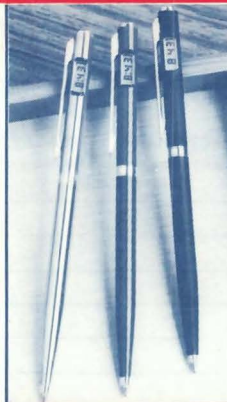
## STICK-ON CLOCK 5-Function LCD Quartz Digital



- Hours • Minutes • Seconds
- Month • Day • Flashing Colon

Have the time wherever you need it. Ideal for car, kitchen, bathroom, office, etc. 1/4" digits. Runs two years on one battery (included). Size: 1-3/8" Round. Specify color: Red: ST-001R White: ST-001W Black: ST-001B

#ST-001 \_\_\_\_\_ (Specify letter) . . . \$4.95 each or 2/\$8.95



## DIGITAL QUARTZ TIME PEN

- ★ 5-Function  
• Hours • Minutes • Seconds • Month • Day
- ★ Liquid Crystal Display
- ★ 1/8" Digits
- ★ Battery Included
- ★ Uses Standard Parker Ink Refills
- ★ Ultra-Slim Design (5 1/2" x 1/4")

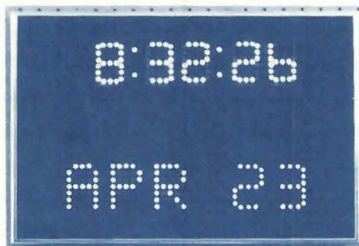
771LK Black/ Gold Trim . . . . . \$9.95 ea.

771SG Stainless Steel/ Gold Trim . . . . . \$9.95 ea.

771LR Red/ Gold Trim . . . . . \$9.95 ea.

## CONDOR ASSEMBLED ELECTRONIC CLOCKS

### 2" Ht. Display Calendar Clocks



(Above) C106-12 Calendar Clock

Features: 115VAC, 50 or 60Hz. Month/Date/Time displayed. 6 digit, 2" ht. display. Brushed chrome case. 12 or 24 hr. operation. Dimensions: 15"L x 12"H x 1-3/8"D.

C106-12 12-hr. . . . . \$395.00 Assbld  
C106-24 24-hr. . . . . \$395.00 Assbld

### 2"Ht. Display Digital Clocks



(Above) C2612 Digital Clock

Features: 115VAC, 50 or 60Hz. Brushed chrome case. Bold, bright LED display. 4-digits (hours, minutes) or 6-digits (hours, minutes, seconds). 12 or 24 hour operation. Viewing to 125 feet. Dimensions: 4-Digit: 12"L x 5"H x 1-5/8"D 6-Digit: 18"L x 5"H x 1-5/8"D

C2412 4-Digit 12-hr. . . \$149.95 Assbld  
C2424 4-Digit 24-hr. . . \$169.95 Assbld  
C2612 6-Digit 12-hr. . . \$179.95 Assbld  
C2624 6-Digit 24-hr. . . \$199.95 Assbld

### 3 1/2" Ht. Display Super Digital Clocks



(Above) C624 Super Digital Clock

Features: 115VAC, 50 or 60Hz. Brushed chrome case. Bright red numbers in black background. 12 or 24 hour operation. 4-digit (hours, minutes), or 6-digit (includes seconds). Viewing to 200 feet. 31 LED's per digit. Dimensions: 4-Digit: 18"L x 5"H x 1-5/8"D 6-Digit: 27"L x 5"H x 1-5/8"D

C412 4-Digit 12-hr. . . \$179.95 Assbld  
C424 4-Digit 24-hr. . . \$199.95 Assbld  
C612 6-Digit 12-hr. . . \$219.95 Assbld  
C624 6-Digit 24-hr. . . \$239.95 Assbld

UTIC

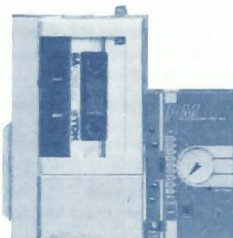
### Mini AM/FM Stereo Receiver

Features lightweight headphones, balance control and full fidelity stereo sound. Belt-clip for hands-free music wherever you go. Weighs only 6 oz. and runs on three AA batteries (not included). Comes complete with soft black carrying case and shoulder strap. Size: 3 1/2" x 4 1/4" x 1".

MODEL 2830 . . . . . \$29.95



AM3-3 AA Alkaline Batteries. . . . . 3 for \$2.95



### Stereo Cassette Player with FM Stereo Tuner Pack

- Lightweight Headphones
- Cr02/Metal/Normal Tape Selector
- Anti-Rolling Mechanism

### TRUMP MUSIC SANDWICH

FEATURES: • Blue carrying case, shoulder strap, belt strap, lightweight headphones, FM stereo tuner pack & instruction manual • Talkline • Tone selector • Cr02/Metal/Normal tape selector • LED operation indicator • Built-in microphone • Stop/eject, play, rewind/review, fast forward/cue, tape/radio selector functions • Vol. control • Ext. power input jack • Headphone jack • Auto-stop mechanism (shuts off player when tape ends) • Anti-rolling mechanism (prevents sound from quivering when walking, jogging, etc.) • Weight: 13 oz. • Requires 4 AA batteries (not included) • Size: 6"L x 4"W x 1-1/8"H

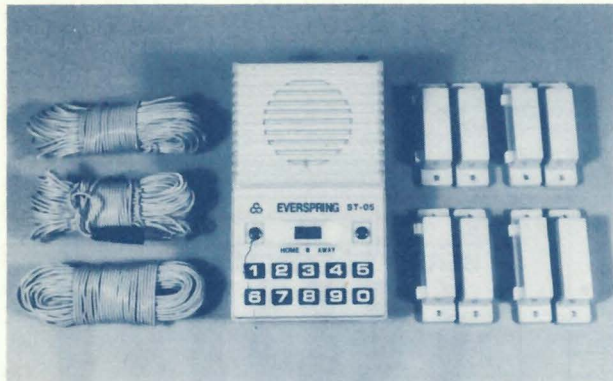
Model TWF-802 . . . . . \$69.95

AM3-4 AA Alkaline Batteries. . . . . 4 for \$3.95



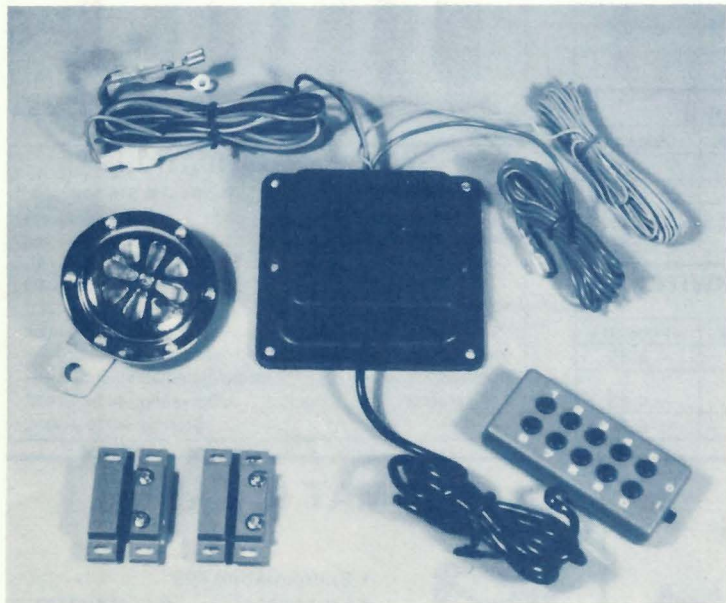
# SECURITY ALARM SYSTEMS

## HOME ALARM SYSTEM



- Self-Installation
- Presettable with individual 3-digit code — no key necessary
- Instant or 10-second delayed warning system
- Alarm system includes window & door contacts
- Battery operated system — only one 9V battery required (not included). Low power consumption (0.01mA).
- Battery test button
- Can only be turned off by secret code
- Loud audible alarm (90db)
- Delayed exit feature
- System complete with one control station with built-in siren and test button; four magnetic contact sets and connecting wires for entire system

**ST-05** Home Alarm System ..... **\$59.95**



## ANTI-THEFT AUTO ALARM SYSTEM

- Audible horn is activated when door or trunk is opened.
- Alarm sounds for three minutes — unless turned off by secret three-digit code.
- Wire cutting will not deactivate alarm.
- Individual code set by owner.
- Utilizes only 0.01mA power.
- System complete with one black-box control unit; one personal coded keyboard; two sets of sensors; one audible horn; and necessary wiring (including one 10 amp fuse).

**CA-06** Auto Alarm ..... **\$59.95**



## DOOR SECURITY SYSTEM

- Coded door alarm.
- Instant or 7-second delay system.
- Alarm activated as door is opened.
- Can be de-activated by pressing personal code.
- Power: One 9V battery (not included).
- System includes one personal coded keyboard and one magnetic sensor.

**ES-07** Door Alarm ... **\$29.95**



## SNAP TOGETHER — NO HARDWARE

SE = FRONT MOUNT    SR = REAR MOUNT



# SWITCHES

MODEL  
NO.

STYLE

MOUNTING  
HOLE DIM.

CIRCUITRY

PRICE

1-9

10-99

100 +

SUB-  
MINIATURE  
TOGGLE  
3 AMP @ 125VAC



FTE01/  
JMT121

SPDT

1/4"

on-off-on

1.95

1.79

1.59

FTD01/  
JMT123

SPDT

1/4"

on-none-on

1.49

1.35

1.19

FTP01/  
JMT221

DPDT

1/4"

on-off-on

2.49

2.29

1.95

FTN01/  
JMT223

DPDT

1/4"

on-none-on

2.25

1.95

1.69

PRINTED  
CIRCUIT  
BOARD  
TOGGLE  
3 AMP @ 125VAC



FTE03/  
MPC121

SPDT

1/4"

on-off-on

2.29

1.95

1.79

FTD03/  
MPC123

SPDT

1/4"

on-none-on

1.69

1.55

1.39

FTP03/  
MPC221

DPDT

1/4"

on-off-on

2.95

2.69

2.39

FTN03/  
MPC223

DPDT

1/4"

on-none-on

2.49

2.29

1.95

LEVER  
FLAT  
TOGGLE  
3 AMP @ 125VAC



FTE41

SPDT(LFH121)

1/4"

on-off-on

2.89

2.59

2.29

FTD41

SPDT(LFH123)

1/4"

on-none-on

2.39

2.15

1.89

FTP41

DPDT(LFH221)

1/4"

on-off-on

3.29

2.89

2.59

FTN41

DPDT(LFH223)

1/4"

on-none-on

2.95

2.69

2.39

7301P3

3PDT

1/4"

on-off-on

8.25

7.95

7.65

ROCKER SWITCH  
10 AMP @ 250VAC



RS026

SPDT

1.10" L x .50" W  
(1.05" depth)

on-on

1.49

1.35

1.19

PUSHBUTTON  
5 AMP @ 125VAC



FPD01/  
PB123

Maintained  
SPDT

1/4"

on-on

3.69

3.29

2.95

FPF01/  
PB126

Momentary  
SPDT

1/4"

on-on

3.69

3.29

2.95

Miniature Slide



SL716

DPDT

5/16" x 5/8"

on-on

.39

.35

.29

Subminiature Slide



MSL34

SPDT

3/8" x 7/32"

on-on

3/1.00

.29

.25

DIPSWITCH



206-4

SPST

8-pin dip

4 switch

1.19

1.09

.99

206-7

SPST

14-pin dip

7 switch

1.39

1.29

1.19

206-8

SPST

16-pin dip

8 switch

1.49

1.39

1.29

206-12

SPST

24-pin dip

12 switch

1.95

1.79

1.59

MINIATURE  
ROTARY  
1.5 AMP @ 28VDC  
Non-Shorting



PA2001

SP  
2-12 position

3/8"

1 pole 12 pos.  
single section

8.49

8.25

7.95

PA2003

DP  
2-6 position

3/8"

2 pole 6 pos.  
single section

8.59

8.35

8.05

MINIATURE  
PUSH BUTTON  
1 AMP @ 125VAC



MS102

Momentary  
SPST

1/4"

normally  
open

.39

.35

.29

MS103

Momentary  
SPST

1/4"

normally  
closed

.49

.45

.39

COLORLED CAPS  
for MS102-103  
SWITCHES  
(Cement On)



MSR-CAP

Red

1/4"

.20

.17

.15

MSB-CAP

Black

1/4"

.20

.17

.15

MSG-CAP

Green

1/4"

.20

.17

.15

MSY-CAP

Yellow

1/4"

.20

.17

.15

MSE-CAP

Blue

1/4"

.20

.17

.15



# NATIONAL/LITRONIX Stick Display Close-Out Sale



NSA298



NSN502



NSB2100



NSB7923



NSB3854

## LITRONIX MULTI-DIGIT REFLECTOR ARRAYS FOR CLOCKS

PART NUMBER/ COLOR	CHAR. HT. (IN.)	POLARITY	DESCRIPTION SEGMENT/DIGIT	OVERALL SIZE Length x Height x Depth	LIGHT OUTPUT (MCD)			FORWARD VOLTAGE SEGMENT (V) I <sub>F</sub> = 20mA		CONTINUOUS FORWARD CURRENT PER SEGMENT (mA) MAX	Avail. Qty.	Close-Out Price
					TYP	MIN	@ mA	TYP	MAX			
DL-4507 (Red)	.50	C.C. MPX	4-Digit — 7 Segment with Colon and Auxiliary Indicators	3-3/16" x 1" x 5/16"	—	1.0	10	1.7	2.0	30	1500	.99
DL-4520A (Red)	.50	C.C. non-MPX		3-3/16" x 1" x 5/16"	.8	.5	10	1.7	2.0	30	2200	.99

## LITRONIX MULTI-DIGIT REFLECTOR ARRAYS

DL-2300 (Red)	.30	C.C. MPX	7 Seg. 2-Digit RHDP	13/16" x 7/8" x 1/4"	2.5	1.1	20	1.7	2.0	30	700	.49
DL-4509 (Red)	.50	C.C. MPX	9 Seg. 4-Digit RHDP	2" x 1-5/16" x 5/16"	.8	.5	10	1.7	2.0	30	8700	.99

## NATIONAL LED NUMERIC ARRAYS

PART NO.	DIGIT SIZE (RED)	FORMAT	DRIVE Comm. Cathode / Comm. Anode	OVERALL SIZE	Avail. Qty.	CLOSE OUT
NSA0088	.100 (9 Bubble Stick)	8.8.8.8.8.8.8.8.	C.C. 8 Digit Multiplexed	1-1/16" L x 7/16" H x 3/16" D	9500	.25
NSA0098	.100 (9 Bubble Stick)	8.8.8.8.8.8.8.8.	C.C. 9 Digit Multiplexed	1-1/16" L x 7/16" H x 3/16" D	2350	.25
NSA166	.100 (9 Bubble Stick)	8.8.8.8.8.8.	C.C. 6 Digit Multiplexed	2" L x .72" H x .27" D	1000	.25
NSA198	.100 (9 Bubble Stick)	8.8.8.8.8.8.8.8.	C.C. 9 Digit Multiplexed	2" L x .72" H x .27" D	1000	.25
NSA298	.100 (9 Bubble Stick)	8.8.8.8.8.8.8.8.	C.C. 9 Digit Multiplexed	1.98" L x .72" H x .27" D	4000	.25
NSA598	.100 (Flat Stick)	8.8.8.8.8.8.8.8.	C.C. 9 Digit Multiplexed	2" L x .72" H x 3/16" D	600	.25
NSA1150	.100 (9 Bubble Stick)	8 8 8 : 8 8	C.C. 5 Digit Multiplexed	2" L x .72" H x .27" D	8000	.25
NSA1298	.110 (9 Bubble Stick)	8.8.8.8.8.8.8.8.	C.C. 9 Digit Multiplexed	1.98" L x .72" H x .27" D	1300	.29
NSA1540	.140 (8 Bubble Stick)	8.8.8.8.	C.C. 4 Digit Multiplexed	2-1/16" L x .72" H x .27" D	2100	.29
NSA1583	.140 (9 Bubble Stick)	8.8.8.8.8.8.8.8.	C.C. 9 Digit Multiplexed	2-3/8" L x .72" H x .27" D	3000	.29
NSA1588	.140 (8 Bubble Stick)	8.8.8.8.8.8.8.8.	C.C. 8 Digit Multiplexed	2-3/8" L x .72" H x .27" D (7/16" pins)	800	.29
NSA1598	.140 (9 Bubble Stick)	8.8.8.8.8.8.8.8.	C.C. 9 Digit Multiplexed	2 1/4" L x .72" H x .27" D	1000	.29
NSA1604	.140 (8 Bubble Stick)	8.8.8.8.8.8.8.8.	C.C. 8 Digit Multiplexed	2 1/4" L x 1 1/4" H x 1/4" D	1100	.29

## NATIONAL MULTI-DIGIT LED NUMERIC DISPLAYS

PART NO.	DIGIT SIZE (RED)	FORMAT	DRIVE Comm. Cathode / Comm. Anode	OVERALL SIZE	Avail. Qty.	CLOSE OUT
NSN301	.3 (yellow)	8.8.	C.A. 2 Digit Direct	2" L x 1" H x 1/4" D	2000	.49
NSN334	.3 No Decimal	8 8	C.A. 2 Digit Direct	13/16" L x 7/8" H x 1/4" D	600	.49
NSN373	.3 No Decimal	8 8	C.C. 2 Digit Direct	.80" L x .80" H x .225" D	23,000	.39
NSN374	.3 No Decimal	8 8	C.A. 2 Digit Direct	.80" L x .80" H x .225" D	2000	.49
NSN502	.5 No Decimal	8 8	C.C. 2 Digit Direct	1.40" L x 1.14" H x .32" D (7/16" pins)	900	.49
NSN507	.5	8 8	C.A. 2 Digit Direct	1" L x 1" H x 5/16" D (7/16" pins)	1200	.49
NSA520	.3	8 8 8 8 8 8 8 8	C.A. 9 Digit Direct	2 1/2" L x 1 1/16" H x 3/16" D	8000	.79
NSN582	.5	8 8	C.A. 2 Digit Multiplexed	1" L x 1.05" H x .28" D	4000	.49
NSN583	.5	8 8	C.C. 2 Digit Direct	1" L x 1.05" H x .28" D (5/8" pins)	2000	.49
NSN734	.7	+i.8.	C.A. 2 Digit Direct	1.2" L x 1.25" H x .3" D	1100	.29
NSN781	.7	8 8	C.C. 2 Digit Multiplexed	1.2" L x 1.25" H x .3" D	140	.69
NSB2100	.3	8 8 8 8 8 8 8 8	C.C. 8 Digit (10 Spaces) Multi.	4" L x .60" H x .250" D	4000	.29
NSB3001	.3	8 8.8.8.	C.A. 4 Digit Direct	1.59" L x .85" H x .25" D (7/16" pins)	4000	.39
NSB3382	.3	+i.8.8.8.	C.A. 3 1/2 Digit Multiplexed	1.60" L x .80" H x .225" D	100	.69
NSB3411	.3	PM 8 8 : 8 8	C.C. 4 Digit—Colon/PM Ind. MUX	1-9/16" L x 13/16" H x 3/16" D	17,000	.69
NSB3652	.3	° i 8 ° 8 8 8	C.C. 6 Dig.-AM/PM, Fail. Ind. Mux	3" L x 1.10" H x 7/32" D	500	1.49
NSB3881*	.3	8.8.8.8.	C.C. 4 Digit Multiplexed	1.59" L x .80" H x .225" D	1000	2.95
NSB3882*	.3	8.8.8.8.	C.A. 4 Digit Multiplexed	1.59" L x .80" H x .225" D	1000	2.95
NSB5382*	.5	±i.8.8.8.	C.A. 3 1/2 Digit Multiplexed	1.99" L x 1.00" H x .28" D	600	3.49
NSB5441	.5	° 8 8 : 8 8	C.A. 4 Digit—AM/PM, Colon Ind.	3.00" L x 1.10" H x .282" D	600	1.49
NSB5881*	.5	8.8.8.8.	C.C. 4 Digit Multiplexed	1.99" L x 1.00" H x .28" D	1000	3.49
NSB5882*	.5	8.8.8.8.	C.A. 4 Digit Multiplexed	1.99" L x 1.00" H x .28" D	800	3.49
NSB5918	.5	+ 8.8.8.8.	C.C. 3 1/2 Digit Multiplexed	3.00" L x 1.10" H x .282" D	2500	1.49
NSB5922	.5	8.8.8.8.	C.A. 5 Digit Multiplexed	3.00" L x 1.10" H x .282" D	4800	1.49
NSB7923**	.7	8 8 8 8 8 8	C.C. 6 Digit Multiplexed / Direct	3.60" L x 1.35" H x .292" D (5/8" pins)	3000	1.95

\*STANDARD STOCK ITEM — ONLY PIN SPECIFICATIONS AVAILABLE ON NON-STOCKED ITEMS.

\*\*CAN BE BOTH MUX / DIRECT BY CONNECTING ALL SEGMENTS TOGETHER.

**GB112** 20 Ea. Multiple Readouts, LED Stick Display, NEW & USED ..... **\$4.00 each or 2 / \$5.95**



# OPTOELECTRONICS

Typical Forward Voltage 1.60-2.20V  
Typical DC Forward Current 50mA

## LEDS

• R-Red • G-Green • Y-Yellow  
• C-Clear • A-Amber

**INFRA-RED LED**

Size: .250"

Part No.	1-99	100+
IRL	5/\$1.00	\$ .17 ea.

**6V MINI LAMP INCANDESCENT**

Part No.	1-99	100+
800-147	Clear w/5" leads	8/\$1.00 \$ .10 ea.
80620	Red w/5" leads	9/\$1.00 .09 ea.

**DIFFUSED BI-COLOR/TRI-STATE**

Reverse polarity to change color.

Part No.	1-99	100+
XC5491		\$ .69 \$ .59 ea.

**DIFFUSED**

Part No.	1-99	100+
XC209R	5/\$.69	\$ .10 ea.
XC209G	4/1.00	.20 ea.
XC209Y	4/1.00	.20 ea.

**WIDE ANGLE DIFFUSED**

Part No.	1-99	100+
XC111R	5/\$.69	\$ .10 ea.
XC111G	4/1.00	.20 ea.
XC111Y	4/1.00	.20 ea.
XC111C	4/1.00	.20 ea.

**POINT SOURCE**

Part No.	1-99	100+
XC554R	5/\$1.00	\$ .17 ea.
XC554G	4/\$1.00	.20 ea.
XC554Y	4/\$1.00	.20 ea.
XC554C	4/\$1.00	.20 ea.

**DIFFUSED TRIANGLE**

Part No.	1-99	100+
XC333R	5/\$1.00	\$ .17 ea.
XC333G	4/\$1.00	.20 ea.
XC333Y	4/\$1.00	.20 ea.

**POINT SOURCE (RED)**

Part No.	1-99	100+
MV10B	4/\$1.00	\$ .20 ea.

**POINT SOURCE (RED)**

Part No.	1-99	100+
MV50	6/\$1.00	\$ .15 ea.

**POINT SOURCE (RED)**

Part No.	1-99	100+
RL-2-02	5/\$1.00	\$ .17 ea.

**DIFFUSED**

Part No.	1-99	100+
XC22R	5/\$.69	\$ .10 ea.
XC22G	4/1.00	.20 ea.
XC22Y	4/1.00	.20 ea.

**DIFFUSED**

Part No.	1-99	100+
XC526R	5/\$.69	\$ .10 ea.
XC526G	4/1.00	.20 ea.
XC526Y	4/1.00	.20 ea.
XC526C	4/1.00	.20 ea.

**DIFFUSED**

Part No.	1-99	100-999	1000+
XC556R	5/\$.69	.11 ea.	.09 ea.
XC556G	4/\$.79	.17 ea.	.15 ea.
XC556Y	4/\$.79	.17 ea.	.15 ea.
XC556C	4/\$.79	.17 ea.	.15 ea.
XC556A	4/\$.79	.17 ea.	.15 ea.

**DIFFUSED RECTANGULAR**

Case Size: .150W x .250L x .271H  
Lead Length: 13/16" (Picture misleading)

Part No.	1-99	100+
XC52124G	3/\$1.00	\$ .29 ea.
XC53124Y	3/\$1.00	.29 ea.
XC57124R	4/\$1.00	.21 ea.

## CLIPLITE LED Mounting System

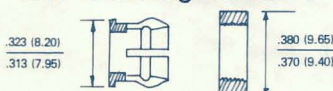


CLIPLITE mounts from the front of the panel in a .250 hole on 3/8" centers. Panel thickness from 1/16" to 1/8". CLIPLITE equalizes and increases the brightness of commonly used wide beam LEDs. CLIPLITE will accept LED diameters from .160 to .210 dia. Can be used with XC22, XC111, XC526, XC554 and XC556 Series.

### PRICING

Part No.	Color	4-99	100-999	1000 +
RTP280	Red	4/\$.80	.16 ea.	.13 ea.
GTP280	Green	4/\$.80	.16 ea.	.13 ea.
CTP280	Clear	4/\$.80	.16 ea.	.13 ea.
ATP280	Amber	4/\$.80	.16 ea.	.13 ea.
YTP280	Yellow	4/\$.80	.16 ea.	.13 ea.

## LED Mounting Hardware



## — Black Plastic Clip & Ring —

Mounts in panels up to .125" thick. Drill .257" diameter hole (F Drill). Can be used with XC22, XC111, XC526, XC554 and XC556 Series (from .160" to .200 Dia.)

### PRICING

Part No.	8-99	100-999	1000 +
LMH-200	8/\$1.00	.08 ea.	.06 ea.

C.A. — Common Anode  
C.C. — Common Cathode

## DISPLAYS

LHDP — Left Hand Decimal Point  
RHDP — Right Hand Decimal Point

Part No.	Socket Required	Size	Color	Description	Price
MAN 1	14	.270	Red	C.A. (LHDP)	\$2.95
MAN 2	14	.320	Red	5x7 Alphabetic (TIL305)	4.95
MAN 3	—	.125	Red	C.C.	.25
MAN 52	14	.300	Green	C.A. (LHDP)	.99
MAN 54	14	.300	Green	C.C. (RHDP)	.99
NSN64R	24	.630	Red	C.C. (RHDP) DL750	.99
MAN 71	14	.300	Red	C.A. (RHDP)	.75
MAN 72	14	.300	Red	C.A. (LHDP)	.75
MAN 73	14	.300	Red	C.A. (± 1) Over Flo	.75
MAN 74	14	.300	Red	C.C. (RHDP)	1.25
NSN 74L	14	.300	Red	C.C. (LHDP)	.99
MAN 82	14	.300	Yellow	C.A. (LHDP)	.49
MAN 84	14	.300	Yellow	C.C. (RHDP)	.99
MAN 3610	14	.300	Orange	C.A. (RHDP)	.69
MAN 3620	14	.300	Orange	C.A. (LHDP)	.49
MAN 3630	14	.300	Orange	C.A. (± 1) Over Flo	.99
MAN 6610	24	.560	Orange	C.A. (RHDP) 2 Digit	.99
MAN 6630	24	.560	Orange	C.A. (± 1) 1 1/2 Digit	.99
MAN 6640	24	.560	Orange	C.C. (RHDP) 2 Digit	1.95
MAN 6650	24	.560	Orange	C.C. (± 1) 1 1/2 Digit	.99
MAN 6710	24	.560	Red	C.A. (RHDP) 2 Digit	.99
MAN 6740	24	.560	Red	C.C. (RHDP) 2 Digit	1.49
MAN 6750	24	.560	Red	C.C. (± 1) 1 1/2 Digit	.99
DL 33B	14	.110	Red	C.C. (3 Digit Bubble)	.49
DL34M	14	.110	Red	C.C. MUX (4-Digit Bubble)	.59
DLO 307	14	.300	Orange	C.A. (LHDP)	1.25
DLG 500	24	.500	Green	C.C. (RHDP)	1.25
DLG 507	24	.500	Green	C.A. (RHDP)	1.25
DL 702	14	.300	Red	C.C. (LHDP)	1.25
DL 704	14	.300	Red	C.C. (RHDP) MAN 74	1.25
DL 707	14	.300	Red	C.A. (LHDP) MAN 72	1.25
DL 728	24	.510	Red	C.C. (RHDP) MAN 6610	1.49
DL 746	24	.630	Red	C.A. (± 1) Over Flo	1.49
DL 747	24	.630	Red	C.A. (LHDP)	1.49
DL 750	24	.630	Red	C.C. (LHDP)	1.49
DLO 847	24	.800	Orange	C.A. (LHDP)	1.49
DLO 850	24	.800	Orange	C.C. (LHDP)	1.49
FND 350	10	.362	Red	C.A. (RHDP)	.75
FND 357	10	.362	Red	C.C. (RHDP) FND 359	.75
FND 358	10	.362	Red	C.C. (± 1) O.F. (RHDP)	.75
FND 501	24	.500	Red	C.C. O.F. (± 1) (RHDP)	.99
FND 503	24	.500	Red	C.C. (RHDP) FND 500	.99
FND 507	24	.500	Red	C.A. (RHDP) FND 510	.99
FND 508	24	.500	Red	C.A. (± 1) O.F. (RHDP)	.99
FND 803	24	.800	Red	C.C. (RHDP) FND 800	1.75
FND 807	24	.800	Red	C.A. (RHDP) FND 810	1.75
FND 847	24	.800	Red	C.A. (RHDP)	1.75
TIL 308	16	.270	Red	Num. Disp. w/Logic	10.95
TIL 311	14	.270	Red	4x7 Hex. w/Logic	10.95
5082-7300	24	.600	Red	4x7 Num. (RHDP)	22.00
5082-7302	24	.600	Red	4x7 Num. (LHDP)	22.00
5082-7304	24	.600	Red	O.F. (± 1) for 5082-7300/02	19.95
5082-7340	24	.600	Red	4x7 Hex. (0-9/A-F)	22.50
5082-7432	14	.110	Red	C.C. (2-Digit/3-Bubble)	.29
5082-7620	14	.300	Yellow	C.A. (LHDP)	.99
5082-7623	14	.300	Yellow	C.C. (RHDP)	.99
5082-7630	14	.300	Green	C.A. (LHDP)	.99
5082-7633	14	.300	Green	C.C. (RHDP) Hi-Eff.	.99
5082-7650	14	.430	Red	C.A. (LHDP) Hi-Eff.	.99
5082-7651	14	.430	Red	C.A. (RHDP) Hi-Eff.	.99
5082-7653	14	.430	Red	C.C. (RHDP)	.99
5082-7656	14	.430	Red	O.F. ± 1 (RHDP) Hi-Eff.	.99
5082-7660	14	.430	Yellow	C.A. (LHDP)	.99
5082-7661	14	.430	Yellow	C.A. (RHDP)	.99
5082-7663	14	.430	Yellow	C.C. (RHDP)	.99
5082-7670	14	.430	Green	C.A. (LHDP)	.99
5082-7671	14	.430	Green	C.A. (RHDP)	.99
5082-7673	14	.430	Green	C.C. (RHDP)	.99
5082-7676	14	.430	Green	O.F. ± 1 (RHDP)	.99
5082-7730	14	.300	Red	C.A. (LHDP)	.99
5082-7731	14	.300	Red	C.A. (RHDP)	1.25
5082-7740	14	.300	Red	C.C. (RHDP) Hi. EFF.	1.25
5082-7750	14	.430	Red	C.A. (LHDP)	.99
5082-7751	14	.430	Red	C.A. (RHDP)	.99
5082-7756	14	.430	Red	O.F. ± 1 (RHDP)	.99
5082-7760	14	.430	Red	C.C. (RHDP)	.99
HDSP-3401	24	.800	Red	C.A. (RHDP & LHDP) (20mm)	1.50
HDSP-3403	24	.800	Red	C.C. (RHDP) (3405 LHDP) (20mm)	1.50
HDSP-3406	24	.800	Red	C.C. (RHDP) ± 1 O.F. (20mm)	1.50

## OPTO-ISOLATORS

IL-1	8	Single Chan.	20% CTR	2500V (LIT-1)	\$ .69
H11C3	8	SCR Output Opto-Isolators			.89
4N25	8	Single Chan.	20% CTR	2500V (MCT-2/LIT-1)	.69
4N28	8	Single Chan.	10% CTR	500V (Photo-Trans.)	.69
4N33	8	Single Chan.	500% CTR	1500V (Photo-Darl.)	.89
MOC3010	8	Optically Isolated Triac Driver			1.25



# DISPLAY MODULES & TIMERS

## .5" 4-Digit Field Effect LCD

TIMEX  
T1001A



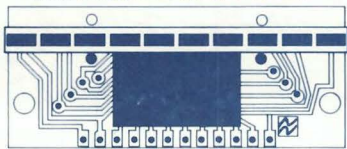
LIQUID  
CRYSTAL  
DISPLAY

**Applications:** • Digital clocks • Thermometers • Pressure gauges • Stopwatches • Timers • Voltmeters and Digital Multimeters  
A reflective LCD gives a dark display on a light background. A 6-9 volt supply is required for operation (not included). Size: 2.00" L x 1.20" W x .170" D. Connector and data sheet included.

**Part No. T1001A Field Effect LCD . . . . . \$7.95**

## 10-Segment Bargraph Displays

WITH ON-BOARD DRIVER IC-CHIP



NSM3914

**Applications:** • Power meter in stereo systems • VU-meter in tape recorders, etc.  
Bar or dot display mode externally selectable by user. Packages are end-stackable for expanded displays. Can be cascaded to 10 arrays (100 bargraph elements). LED current programmable from 2mA to 30mA. Stable internal voltage reference for full scale analog inputs from 1.2 to 12V. Size: 2" L x 7/8" H x 3/16" D (.160" L x .063" H per BAR).

Part No.	Description	Price
NSM3914	Linear Function (10 bars red) . . . . .	\$5.95
NSM39146	Linear Function (6 bars green/4 red) . . . . .	6.95
NSM3915	Logarithmic Function (10 bars red) . . . . .	5.95
NSM39158	Logarithmic Function (6 grn./2 yell./2 red) . . . . .	6.95
NSM3916	VU-Meter Function (10 bars red) . . . . .	5.95
NSM39168	VU-Meter Function (6 grn./2 yell./2 red) . . . . .	6.95



## 4-Digit 16-Segment Red Alphanumeric Intelligent Display with Memory, Recorder & Driver

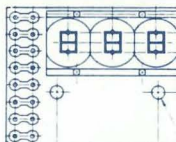


End-stackable, 4-character package. High contrast, 160mm high, magnified monolithic characters. 64-Character ASCII format. Built-in memory, decoder, multiplexer and drivers. Direct access to each digit independently and asynchronously. Five volt logic, TTL compatible. Five volt power supply only. Independent cursor function. Size: 1" L x 1-3/16" H x .225" D.

**Part No. DL1416 Alphanumeric Display . . . . . \$9.95**



## .180" 3-Digit Red Up/Down Counter Module



**Applications:** • Tape recording systems • Up/down counters • Toys and games  
The MA6013 is an electronic up/down counter module featuring a 3-digit LED display. The display consists of monolithic red digits magnified by a clear bubble lens which produces an apparent digit height of .180" (.44mm). The clock input has a 4-bit prescaler (divide-by-16) incorporated into the module. Size: 1.535" L x 1.25" H x .397" D. Data sheet included.

**Part No. MA6013 Up/Down Counter Module . . . \$6.95**

## .8" Red LED Clock Display

FAIRCHILD



FCS8000

**Applications:** • Wall & Desk Clocks • Clock Radios • Interval Timers  
The FCS8000 is a 3 1/2-digit, common cathode, solid state numeric display module. It includes an AM/PM indicator and pinouts compatible with the National MM5387 MOS clock circuit. The FCS8024 is a 4-digit, common cathode version for European format. Standard interface circuits will allow operation with TTL, DTL, or CMOS SSI and MSI circuits. Size: 3.50" L x 1-7/16" H x 7/16" D. Data sheet included.

**Part No. FCS8000 3 1/2-Digit Display (12 Hr.) . . . \$2.95 ea.**

**Part No. FCS8024 4-Digit Display (24 Hr.) . . . . \$2.95 ea.**

## .5" Vacuum Fluorescent Display



5-LT-43B1

The device is a 4-digit fluorescent display. The display features 10 bar indicators and a colon indicator. It is ideal for use in timer clocks and other such appliances and applications. Blue-green illuminations. Size: 0" L x 0" H x 0" D.

**Part No. 5-LT-43B1 4-Digit Plus Colon . . . . . \$2.95**



## 0.5" 4-Digit LED Display

with Serial Data/Parallel Data-Out LED Driver

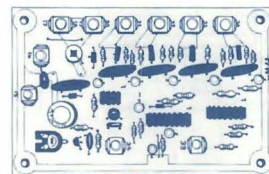


**FEATURES:** • Four 0.5" digits with right-hand decimal points • LED current is programmable • Serial data input • Clock format — colon between center digits • Enable • TTL compatible • Wide power supply operation • Direct current drive (non-multiplexed)  
**Applications:** • COPS™ or microprocessor display • Digital clocks • Thermometers • Counters • Voltmeters • Instrumentation readouts • Size: 1.99" W x 1.70" H x .287" D

The NSM4005A is a 4-digit 0.5" height LED display with a serial data/parallel data-out LED driver designed to operate with minimal interface to the data source. Current drive to the LEDs is programmable by setting a reference current to a single pin.

**Part No. NSM4005A LED Display w/Driver . . . . \$7.95**

## Universal Timer Board



## Multi-Output Delay Sequencer

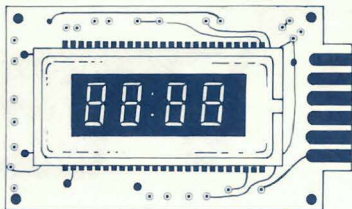
• 4 Triac switchable outputs • Triacs rated @ 500V 2.5 amp • Can be modified for any time-based timer • Time on and off can be set by changing capacitors • Requires 115VAC for operation • Kit supplied with potentiometers and a capacitor for building a 200-hour variable time base • Data sheet included • Size: 5" L x 3 1/4" H x 7/8" D

**Part No. TB43896 Universal Timer Board . . . . . \$6.95**



# NATIONAL CLOCK & TIMER MODULES

## .3" Green 12VDC Vacuum Fluorescent Automotive/Instrument Clock



**APPLICATIONS:** • In-dash autoclocks • After-market auto/recreational vehicle clocks • Aircraft-marine clocks • 12VDC oper. instrument • Portable/battery powered instruments

**FEATURES:** Bright 0.3" green display. Internal crystal timebase.  $\pm 0.5$  second/day accuracy. Automatic display brightness control logic. Display color filterable to blue, blue-green, green and yellow. Complete data sheet — just add switches and lens.

**MA1003 Module** (3.05" L x 1.75" H x .98" D) ..... **\$14.95**

## .7" Red Digital LED Alarm Clock/Thermometer



**APPLICATIONS:** • Clock radio timers • Alarm clocks • Desk clocks • TV/Stereo timers • Instrument panel clocks • Thermometers (°C or °F)

**FEATURES:** 0.7" — 4-digit LED display. "One-finger" 59-min. sleep counter setting. Multiple 9-min. snooze counter. 24-hr. alarm w/on/off control. Entire display flashes to indicate power loss. Simple fast/slow setting controls. 6 display modes (temp., time, sec., alarm, sleep and lamp test). User selectable °C/°F, 12/24-hr., 50/60Hz and fixed/flashing colon function. Leading zero blanking. Complete system requires addition of transformer, setting switches and sensor. Direct-drive LED display—no RFI. Bright/dim or cont. display brightness control capability. 800Hz (nom.) alarm tone output, gated at 2Hz rate. 24-hr. output signal for optional calendar circuit. Separate inputs for all setting and display modes. Data sheet included.

**MA1026 Module** (3.75" L x 1.75" H x .812" D) ..... **\$16.95**

**102-P22 Transformer** for MA1026 Clock Module ..... **\$3.49**

**LM334Z Constant Current Source** (Temperature Sensor) ..... **\$1.19**

## .5" Red Digital LED Clock with Transformer



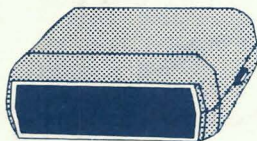
**FITS IN-CC CLOCK CASE**

**APPLICATIONS:** • Clock-radio timers • Alarm clocks • Desk clocks • TV/Stereo timers • Instrument panel clocks

**FEATURES:** Bright 4-digit 0.5" LED display. Complete — add only transformer and switches. Alarm clock and clock-radio versions. 12 or 24-hour display format. 50 or 60Hz operation. Power failure indication. Brightness control capability. "Sleep" and "snooze" timers. Alarm "on" and PM indicators. Direct-drive—no RFI. Fast and slow set controls. Low cost, extremely compact design. Uses Transformer 102P24, included. Size: 3.05" L x 1.375" H x .93" D. Data sheet included.

**MA1002E With Transformer** (12 Hour) ..... **\$8.95**

**MA1002G With Transformer** (24 Hour) ..... **\$9.95**



## INSTRUMENT/CLOCK CASE

This case is an injection molded unit that is ideal for uses such as DVM, counter, or clock cases. It is a black case with red bezel and includes a mounting bracket (for car dash), bezel, and four screws. Hole in back for power cord. **Inside Dimensions:** 3 1/4" W x 4 1/8" L x 1 1/2" H. **Outside Dimensions:** 3 7/8" W x 4 7/16" L x 1 5/8" H. **Bezel Dimensions:** 3 1/4" W x 7/8" H.

**IN-CC Instrument/Clock Case** ..... **\$4.95 each**

— SEE PAGE 62 FOR ANOTHER STYLE CLOCK CASE —

## .7" RED DIGITAL LED CLOCK



**FITS IN-CC CLOCK CASE**

**APPLICATIONS:** • Clock radio timers • Alarm clocks • Desk clocks • TV/Stereo timers • Instrument panel clocks

**FEATURES:** Display size: 0.7". "One-finger" 59-minute sleep counter setting. Multiple 9-minute snooze counter. 24-hour alarm with on-off control. Entire display flashes to indicate power loss. Simple fast/slow setting controls. Five display modes (time, seconds, sleep, alarm, and lamp test). User selectable 12/24 hour, 50/60Hz and fixed/flashing colon operation. Leading zero-blanking. Requires only the addition of transformer and setting switches. Direct-drive LED display — no RFI. Continuous "two-level" or automatic display brightness control capability. Back-up oscillator option allows continuous time-keeping during power-line failure with a single 9V battery and external 5M ohm potentiometer. 800Hz (nom.) alarm tone output, gated at a 2Hz rate. 24-hour output signal for optional calendar circuit. Separate inputs for all settings and display modes. Data sheet included.

**MA1023 Module** (3.30" L x 1.50" H x .624" D) ..... **\$8.95**

**102-P20 Transformer** for MA1023 Clock Module ..... **\$3.49**

## .3" Red Digital LED Clock/Timer



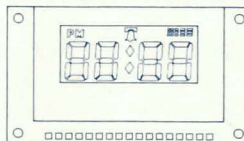
**APPLICATIONS:** • Clock radio timers • Alarm clocks • Desk clocks • TV/Stereo timers • Appliance timers • Instrument panel clocks

**FEATURES:** 0.3" display size. "One-finger" 59-minute sleep counter setting. Multiple 9-min. snooze counter. 24-hr. alarm w/on/off control. Entire display flashes to indicate power loss. Simple fast/slow setting controls. Five display modes (time, sec., alarm, sleep and lamp test). User selectable 12/24 hour, 50/60Hz and fixed/flashing colon oper. Leading zero blanking. Direct-drive LED display — no RFI. Display brightness control. Back-up oscillator allows continuous timekeeping during power-line failure w/single 9V battery and external 5M ohm pot. 24-hr. output for optional calendar circuit. Separate inputs for all settings and display modes. Data sheets included.

**MA5036 Module** (1.60" L x 1.00" H x .1875" D) ..... **\$6.95**

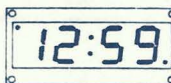
**102-P20 Transformer** for MA5036 Clock Module ..... **\$3.49**

## .5" DIGITAL LCD CLOCK



**FEATURES:** 0.5" LCD display with PM, sleep and alarm enunciators. User-selectable 12 or 24 hour mode. 24-hour alarm with on/off control. Presettable 59-minute sleep timer with reset to zero feature. 7-minute snooze timer. Fast/slow setting controls. Time setting hold mode for accurate time setting. Seconds display mode. Operates from a single 1.5V battery. Low power consumption: 90mA hour battery will typically provide one year of operation. Buffered alarm and sleep outputs for travel alarm and clock radio power switch applications. Self-contained tunable oscillator; optional customer tunable module. Backlighting display, flashing colon, DC alarm, fixed tuning. Minimum external parts required for travel clock/clock radio applications. Data sheet included.

**MA1032CBA Module** (3.20" L x 1.80" H x .862" D) ..... **\$17.95**



## .5" RED DIGITAL CLOCK MODULE

**FITS IN-CC CLOCK CASE**

**APPLICATIONS:** • Clock/ Radio timers • Alarm clocks • Desk clocks • TV/Stereo timers • Instrument panel clocks

**FEATURES:** Display size: 0.5" — "One-finger" 59-minute sleep counter setting. Multiple 9-minute snooze counter. 24-hour alarm with on-off control. Entire display flashes to indicate power loss. Simple fast/slow setting controls. Five display modes (time, seconds, sleep, alarm and lamp test). User selectable 12/24 hour, 50/60Hz and fixed/flashing colon operation. Leading zero blanking. Requires only the addition of transformer and setting switches. Direct-drive LED display — no RFI. Continuous "2-level" or automatic display brightness control capability. Separate inputs for all settings and display modes. Size: 3.30" L x 1.30" H x .75" D. Data sheet included.

**MA1022-GLR Clock Module** w/red plastic lens cover ..... **\$6.95**

**102-P20 Transformer** for MA1022 ..... **\$3.49**



# TRANSFORMERS, FUSES & BATTERY ACCESSORIES

## AC & DC Wall Transformers

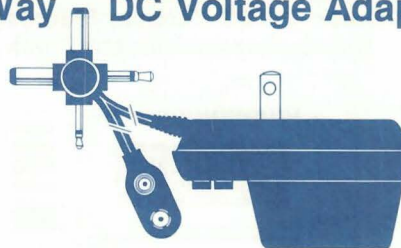
Ideal for use with clocks, games, power supplies or any other type of AC or DC application.

\*UL Approved



Part No.	Input	Output	Price
AC9004*	117V/60Hz	9.2VAC 2.5 amp	\$3.95
AC250	117V/60Hz	12VAC 250mA	\$3.95
AC500	117V/60Hz	12VAC 500mA	\$4.95
AC1000*	117V/60Hz	12VAC 1 amp	\$5.95
DC800*	120V/60Hz	8VDC 400mA	\$1.95
DV9200*	117V/60Hz	9VDC 200mA	\$3.25
DC900*	120V/60Hz	9VDC 500mA	\$3.95
DC5490*	120V/60Hz	9.5VDC 275mA	\$2.95
DC1200*	120V/60Hz	10.5VDC 300mA	\$2.95

## 5-Way DC Voltage Adapter



### WITH UNIVERSAL PLUG AND 9V BATTERY SNAP

• Selective voltages: 6.9, 12VDC • Polarity selection: (+) or (-) • Six-foot line from adapter to plugs • Six-inch line from adapter to battery snap • 120V/60Hz 300mA

**DC6912 . . . . . \$8.95**

## Clock Module Transformers

**Part No. 102P20 . . . . . \$3.49**

• Use for Clock Module MA1023, MA5036  
• PRI: 115VAC, 60Hz • Sec: 9V @ 25mA, 8VCT @ 250mA • Size: 2" L x 1-3/16" H x 1-7/16" D  
(See Clock Modules on page 41)

**Part No. 102P22 . . . . . \$3.49**

• Use for Clock Module MA1026 • PRI: 115VAC, 60Hz • Sec: 12V @ 25mA, 6.5VCT @ 250mA • Size: 2" L x 1-3/16" H x 1-7/16" D  
(See Clock Modules on page 41)

**Part No. 102P24 . . . . . \$3.49**

• Use for Clock Module MA1002 • PRI: 115VAC, 60Hz • Sec: 16V @ 23mA, 10.4VCT @ 250mA • Size: 2-5/16" L x 1-5/16" H x 1 1/4" D  
(See Clock Modules on page 41)



**P8130 (F25X) and F255X**

### FILAMENT TRANSFORMER

• Input: 117V/60Hz • Output: 12.6VCT @ 2 amps • 1500RMS test voltage • Mounting centers: 2 3/4" • Size: 3 1/4" L x 2" H x 2-1/8" D

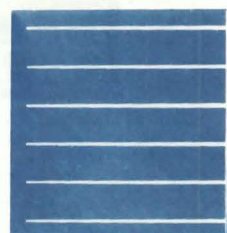
**P8130 (F25X) . . . . . \$6.95**

### POWER TRANSFORMER

• Input: 115V Primary, single secondary 50-60Hz • Output: 20VCT @ 2 amps • 1500RMS test voltage • Mounting centers: 2-13/16" • Size: 2-9/16" H x 4" W x 2 1/4" D

**F255X . . . . . \$10.95**

## Solar Cells



• Can be added in series for higher voltage or parallel for higher current  
• 0.4V, 100mA, 41mW • Size: 2x2 cm. (approx. .790" x .702")

**SC2x2 . . \$1.95 each or 3 for \$4.95**

## BATTERY HOLDER



• Holds 2 each "C" cell batteries • Aluminum case • 5" leads • Size: 2-3/16" L x 2-1/16" W x 1 1/4" D.

**BH-801-159 . . . \$35 each**

## BATTERY HOLDER



• Holds 4 each "C" cell batteries • Plastic case • 9" leads • Size: 4-5/16" L x 2-1/8" W x 7/8" D

**BH82721 . . . . \$39 each**

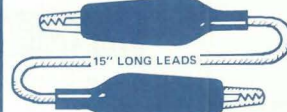
## TERMINAL STRIP



• Three terminal strips with side terminals used for mounting • Size: 1-7/8" L x 11/16" H (including terminal)

**TS-4 . . . . . 4 for \$1.00**

## Alligator Clip Test Leads



• Heavy-duty leads • Color coded • Insulated alligator clip on each end • 15" long • Two each black, red, blue, white and yellow

**ALCP (10 per pkg.) . \$2.95/pkg.**

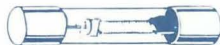
## FUSES



### AGC FUSES

• BUSS fast acting fuses for protection of instruments • Size: 1/4" x 1 1/4" • Glass tube • 3AG 250V or less • **Please specify amperes:** 1/4, 3/8, 1/2, 3/4, 1, 2 • Box includes 5 of same type fuse.

**AGC . . . . . \$2.95/box**



### MDL FUSES

• FUSETRON dual element glass tube • Slow blowing fuse • Size: 1/4" x 1 1/4" • 250V or less • **Please specify amperes:** 1/16, 1/8, 1/4, 1/2, 3/4, 1, 2 • Box includes 5 of same type fuse

**MDL . . . . . \$3.25/box**

## FUSEHOLDER



• Normal current carrying capacity: 30 amps • Recognized under the component program of Underwriters Laboratories, Inc. for 15 amps, 250V or less

**HKP 1-24 . . . . . \$79 each**

**HKP 25-99 . . . . . \$75 each**

**HKP 100 + . . . . . \$69 each**

## 9V BATTERY CLIP



Standard clip for use with 9V transistor batteries. Has 4" leads.

**BC9 . . . . . 9 for \$99**



# AUDIBLE DEVICES, JOYSTICKS & TOOLS

## SPEAKERS



**A0201**

2 1/4" Round — 8 Ohm  
.25 Watt (4" Leads)  
Size: 2 1/4" dia. x 3/4" deep

Part No.	Price
<b>A0201</b>	<b>.....\$9.99</b>



**SF-25016**

2 1/2" Square — 16 Ohm  
.25 Watt (4 mounting holes)  
Large Ceramic Magnet  
Size: 2-5/8" square x 3/4" deep

Part No.	Price
<b>SF-25016</b>	<b>.....\$1.25</b>

## BUZZERS



**MB3**

Operates on 3VDC output  
Frequency: 450Hz Current: 50mA  
Sound output: 80db at 30CM  
Size: 1-5/8" x 5/8"

Part No.	Price
<b>MB3</b>	<b>.....\$1.95</b>



**MB6**

Operates on +6 to +9VDC  
Output frequency: 800Hz  
Draws only 15mA @ 600 Ohms  
Sound: 80db Size: 1 1/4" x 5/8"

Part No.	Price
<b>MB6</b>	<b>.....\$1.75</b>

## Sound Activated Switch



- Operates from a 6V or 9V battery
- Responds to sound and switches on an SCR
- Consists of sensor, SCR, transistor, caps, resistors and sensitivity control assembled on PC board
- Size: 1-31/32"L x 1-13/16"W x 3/4"D

Part No.	Price
<b>SAS-1</b>	<b>.....\$9.99</b>

## SONALERT® AUDIBLE SIGNAL DEVICE

"Use as a Warning Device  
or Audible Reminder"



- Turns on and off with low power transistor, SCR or IC
- Can be battery operated 6-28 volts
- Solid-state — no moving parts
- Panel mounts in 1.25" round hole
- Black plastic case — includes mounting nut
- Operating volts (DC): 6 (min) to 28 (max)
- Current mA: 3 (min) to 14 (max)
- dbA: 69 (min) to 80 (max)
- Frequency: 2900Hz ± 500
- Size: 1 1/4" H x 1-11/16" D

Part No.	Price
<b>SC628</b>	<b>.....\$7.95</b>

## JOYSTICK Video Controller



FRONT VIEW

**NOTE: JS5K, JS100K or JS150K Joysticks are interchangeable with the 40K pot in the JVC-40 Joystick**

- Ideal for all video games or remote control projects
- Two miniature potentiometers are 40K ohms each
- SPST pushbutton control
- Five-wire connection cable, 5' long
- Rugged plastic case
- Specification sheet not available — not spring-loaded
- Case size: 1 1/2" H x 2-3/8" W x 4-5/16" L

<b>JVC-40</b>	<b>.....\$4.95</b>
---------------	--------------------

## Wire Stripper/Cutter



STRIPS WIRE GAUGE 12 THRU 24  
PLASTIC COATED HANDLES  
SIZE: 5 inches long

Part No.	Price
<b>WS-150</b>	<b>.....\$3.99</b>

## THE 3rd HAND



**PCB-3  
MAKES CIRCUIT  
ASSEMBLY A BREEZE**  
Lets you work with both hands.  
Sturdy aluminum construction.

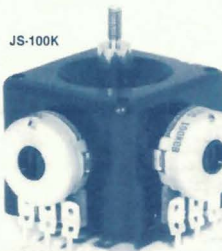
Clamp "3rd Hand" on edge of bench table or workboard. Insert circuit board, position components. Notice convenient working angle. Flip circuit board to flat position for soldering and clipping. Reverse procedure for double-sided boards.

<b>PCB-3</b>	<b>.....\$13.95</b>
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Extension to hold PCB-3 2" from bench and 6" from front edge.

<b>PCB-X</b>	<b>.....\$6.95</b>
--------------	--------------------

## JOYSTICK MICRO-MINIATURE



- These can be used in the JVC-40
- Two each 150K, 100K or 5K pots (linear taper)
- Not spring-loaded
- Volt. rating: 150V
- Power rating: 0.04W
- Size: 1-5/8"D x 1-5/8"W x 1-7/16"H. (Knob not included)

Part No.	Price
<b>JS5K</b>	<b>.....\$5.25</b>
<b>JS100K</b>	<b>.....4.95</b>
<b>JS150K</b>	<b>.....4.75</b>
<b>JS-Knob</b>	<b>......99</b>



## NIBBLING TOOL

This Nibbling Tool is perfect for cutting, trimming, or notching sheet metal up to 18 gauge. It operates like a punch and die, and also works well on aluminum or plastic up to 1/16" thick. We feel that this tool can be a real time-saver for our customers when working on chassis, printed circuit boards and prototype models. Size: 6 1/2" long.

Part No.	Description	Price
<b>NT-1</b>	<b>Nibbling Tool</b>	<b>.....\$9.95</b>
<b>RP-1</b>	<b>Replacement Punch</b>	<b>.....\$5.95</b>



# SOLDER & CRIMPING TOOLS



## SOLDER

- 60% Tin • 40% Lead
- Rosin Core • .045" diameter • Weight: 2.5 oz.

Part No.	Price
SK-15	\$3.99



## SOLDER WICK

Economical desoldering method to remove solder. 5 feet.

Part No.	Width	Price
40-1	.025"	\$1.49
40-2	.050"	1.49
40-3	.075"	1.49

## SOLDER 5-Core Resin



- Dispense Pak for diodes, transistors, PC's, etc. • Extra thin
- Non-corrosive • 21 feet • 60% Tin/40% Lead (SN60) • 22AWG
- .028" diameter

Part No.	Price
PC115	\$2.95

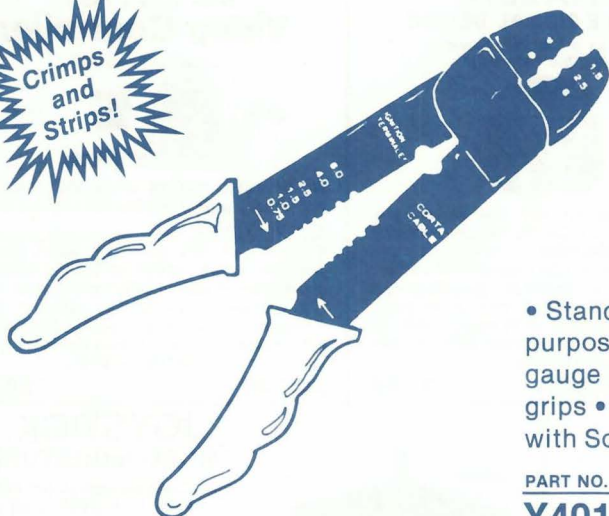
## SOLDER IRON

UL  
Approved



- Heavy duty • 110-120V/30 Watt
- Lightweight • Size: 10" long

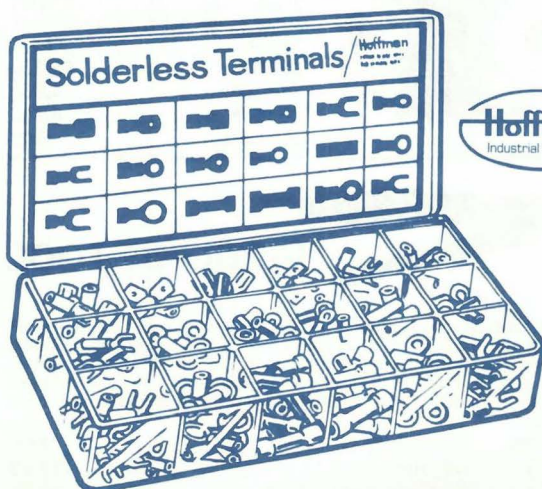
Part No.	Description	Price
SG-30	Solder Iron	\$4.95
SG-Tip	Replacement Tip	.99



## CRIMPING TOOL

- Standard/Light Duty • Electrical and general purpose • Crimps insulated terminals sizes 22-10 gauge • Strips wire 22-10 gauge • Molded vinyl grips • Stamped steel construction • Ideal for use with Solderless Terminal Kit A18K as listed below

PART NO.	DESCRIPTION	PRICE
Y401	Crimping Tool	\$5.95



## SOLDERLESS INSULATED TERMINALS & CONNECTORS

FOR ALL ELECTRICAL REPAIRS

Each Kit contains 175 insulated terminals and connectors and features 18 of the most popular styles and configurations (rings, spades, butt connectors, male and female disconnects), everything needed to perform professional wiring jobs. "See-through" hinged box makes storage and selection quick and easy. A must for anybody who wants professional wiring results.

PART NO.	DESCRIPTION	PRICE
A18K	Terminal/Connector Kit	\$8.95



### Robot/Slot Car Grab Bag



Over 100 Gears including Bevel, Miter, Spur and Differential Units. Over 20 Shafts including Universals. Two 12VDC Motors. Two Hand Speed Controls. Twelve Rubber Wheels and Hubs. Plus other items for Robot/Slot Car applications. (Picture may vary)

GB180 . . . \$9.95 each



### Mabuchi Toy Motor



Size: .937" OD, 1.20"L. Operating voltage: 1.5V to 6.0V. DC Voltage: 3.0. RPM: 9200 @ .20 Amp. Small torque: 0.97 oz. in.

GB182 . . . 5 for \$2.00

### CAPACITORS

Part No.	Description	Price
GB100	100 each Ceramic Disc (10pf—1mf) . . . . .	\$2.00
GB101	60 each Mylar . . . . .	4.00
GB102	60 each Electrolytics . . . . .	4.00
GB103	40 each Tantalum (tubular & dipped) . . . . .	4.00
GB176	40 each Dipped Micas (10pf-1000pf @ 100-500V) . . . . .	4.00

### INTEGRATED CIRCUITS

GB108	50 each TTL Series — marked (7400,74107,74123, etc.) . . . . .	\$4.00
GB109	30 each Linear — marked (LM301,307,741,308, etc.) . . . . .	4.00
GB150	20 each Shift Registers — marked (2510,2518,2532,2533, etc.) . . . . .	4.00
GB157	50 each DTL Series — marked (DM930,932,936,946, etc.) . . . . .	5.00
GB158	6 pcs. Pos. Voltage Regulators (TO-3 case) (7805,06,12,15,18,24, etc.) Linear marked . . . . .	4.25
GB159	6 pcs. Neg. Voltage Regulators (TO-3 case) (7905,06,12,15,18,24, etc.) Linear marked . . . . .	4.00
GB170	25 each Assorted 74LS TTL Series . . . . .	4.00
GB172	10 pcs. 78M Pos. Voltage Reg. (TO-5 case) (78M05,8,12,15,20,24, etc.) Linear marked . . . . .	4.00
GB181	25 pcs. Signetics RAMs & PROMs (82S Series) . . . . .	4.95
	82S06,07,10,11,16,21,23,25,123,126,129, etc. (untested)	

### LEDs — LAMPS — READOUTS

GB110	100 each Assorted LEDs (colors & sizes) (XC556,XC526, etc.) . . . . .	\$6.00
GB111	40 each NE-2 Neon Type Lamps . . . . .	3.00
GB112	20 each Multiple Readouts, calculators, sticks, timers, LEDs to Panaplex — new, used & rejects . . . . .	4.00
GB162	50 each 7-Segment Displays (various colors and sizes) . . . . .	5.00

### POTENTIOMETERS

GB113	30 each Miniature Trimmers (100 ohm - 1 Meg) . . . . .	\$4.00
GB134	24 each 3/8" square single-turn PC Mount (untested — 10 ohm to 500 ohm) marked . . . . .	3.00
GB135	24 each 3/8" square single-turn PC Mount (untested — 1K to 50K) marked . . . . .	3.00
GB136	24 each 3/8" square single-turn PC Mount (untested — 100K to 5 Meg) marked . . . . .	3.00
GB174	25 each 1/4 watt thumbwheel single-turn (500 ohm - 5 Meg) . . . . .	2.00
GB183	10 pcs. Linear Slide Pots. (500u-500K) . . . . .	5.00
GB184	10 pcs. Volume Control Pots. (100u thru 100K) no bushing . . . . .	2.00

### KNOBS

GB185	20 each Knobs (assorted styles, sizes & colors) . . . . .	\$3.00
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### DIODES

Part No.	Description	Price
GB107	100 each Silicon (1N914/1N4148) . . . . .	\$2.00
GB164	200 each marked, unmarked rectifiers & zeners . . . . .	2.00
GB171	80 each Assorted Germanium (1N34,1N68,1N270) marked and unmarked . . . . .	2.00
GB175	100 ea. 1-3 amp (cathode band) silicon rectifiers . . . . .	3.00

### RESISTORS

GB116	200 each 1/4 watt resistor assortment . . . . .	\$2.00
GB117	200 each 1/2 watt resistor assortment . . . . .	2.00
GB118	30 ea. Wire Wound 5, 10, 20W (1-100 ohm) . . . . .	4.00
GB154	100 each 1 and 2 watt resistor assortment . . . . .	2.00
GB178	500 ea. 1/4, 1/2, 1w. resistors (marked/unmarked) . . . . .	4.00

### SWITCHES

GB120	25 each Miniature slide . . . . .	\$3.00
GB122	20 ea. Reed relays w/coil & magnet-glass tube . . . . .	5.00
GB165	40 asst. toggle, rocker, pushbutton . . . . .	10.00
GB179	20 each Dip Switches (asst. positions) . . . . .	9.95

### HARDWARE

GB139	40 each Terminal Strips solder and screw types (3 to 8 terminals) . . . . .	\$3.00
GB140	150 each Spacers, standoff, insulators (metal, nylon and plastic) . . . . .	2.00
GB141	200 each Washers and Spacers (nylon & teflon) . . . . .	2.00
GB142	50 ea. Chassis mounting feet (rubber & plastic) . . . . .	2.00
GB144	200 each Solder lugs (small) . . . . .	2.00
GB145	100 each Lugs — crimp-on (some insulated) . . . . .	2.00
GB166	48 Threaded metal & plastic spacers (1/2-2" long) . . . . .	2.00
GB167	200 pcs. sheet metal and metal tapping screws . . . . .	2.00
GB168	200 pcs. angle bkts, clip insulators, etc. . . . .	3.00
GB169	100 pcs. tie wraps and harness clips (3-6") . . . . .	3.00
GB180	100 pcs. Robot/Slot Car gears, shafts, wheels, motors . . . . .	9.95

### MISCELLANEOUS

GB123	30 each Heat Sinks — assorted sizes . . . . .	\$3.00
GB126	50 ea. Opto-Isolators — IL-1 Series (untested) . . . . .	2.00
GB127	100 each Transistors — plastic and power . . . . .	3.00
GB128	30 each Toroid Cores — iron and tape . . . . .	4.00
GB129	50 each Photo Transistors (LPT) . . . . .	4.00
GB131	30 each 6" shrink tubing, asst. sizes/colors . . . . .	4.00
GB137	50 each Chokes, coils and inductors (molded-wire-adjustable) . . . . .	3.00
GB138	2 each Speakers, 2 1/4", 8 ohm, 1/4 watt . . . . .	1.95
GB155	300 each mixed resistors, capacitors, diodes, transistors, chokes . . . . .	3.00
GB160	Printed Circuit Board . . . . .	2.00
	Contains 50-75 components on each board	
GB163	30 each Sockets (asst. IC and transistor) . . . . .	4.00
GB177	200 each 1" shrink tubing, asst. colors/sizes . . . . .	3.00
GB182	5 each Toy Motors (operating volt. 1.5V-6.0V) 9200rpm . . . . .	2.00

— ALL GRAB BAGS ARE NON-RETURNABLE —



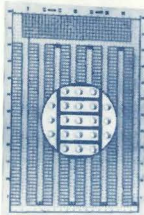


## PLUGBOARDS FOR INTERFACE, MEMORY EXPANSION, EXPERIMENTATION

Unless noted, boards listed are 10.0 inches (254mm) wide, by 5.3 inches (135mm) high and have 50/100 nickel plated gold flashed contacts spaced 0.125 (3.2mm) centers and 0.042 inch (1.1mm) diameter holes on 0.1 inch (2.5mm) grid for DIP mounting.

## CIRCBORDS

• Most popular plugboard patterns without the expense of edge connectors • Wire by wrapping, soldering or solder-thru pencil wiring • Tinned circuit pattern one side, other side bare • Size: 4.5" x 6.5" x .062" epoxy glass .042" dia. holes on .1" grid • Universal I/O area for mounting any type board connector



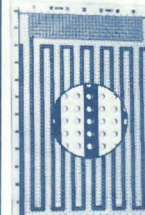
**CIRCBORD  
No. 8001**

- Convenient power & ground buses
- 3-hole pads
- 2 buses
- Mounts 20 each 16-pin DIPs
- Quick solder mounting
- .042" dia. holes on .1" grid



**CIRCBORD  
No. 8002**

- Mounts .3", .6", .9" wide IC's
- Convenient power & ground buses
- 2 buses
- Best for wire wrapping
- Mounts 35 16-pin DIPs



**CIRCBORD  
No. 8003**

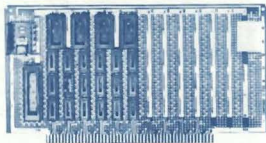
- Mounts any DIP or discrete components
- Pad-per-hole
- Quick solder mounting
- Mounts 60 16-pin DIPs or 48 16-pin DIPs spaced

**Part No. 8001 . . . . . \$19.95**

**Part No. 8002 . . . . . \$19.95**

**Part No. 8003 . . . . . \$19.95**

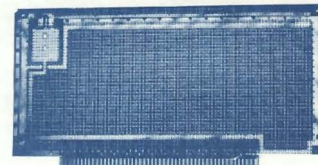
## UNIVERSAL MICROCOMPUTER PROCESSOR PLUGBOARD NO. 8800V



Compatible with Altair 8800 and the Imsai 8800 microcomputers, the board can hold two 40-pin DIPs, eight 24-pin DIPs and thirty-six 14- or 16-pin DIPs. Alternatively, it can hold fifty-two 14- or 16-pin DIPs, or ten 40-pin DIPs and eight 24-pin DIPs, or any combination in-between. Power is distributed to each DIP location by heavy copper-tinned power and ground planes on opposite board sides for low impedance. Has prewired regulator circuit and two heat sink provisions. For wiring ease, boards are identified by DIP zones as well as column and row hole designations. Use R681-1 or R681-2 connector. Includes heat sinks, mounting hardware, layout paper for each side, and terminal sampler kit with instructions.

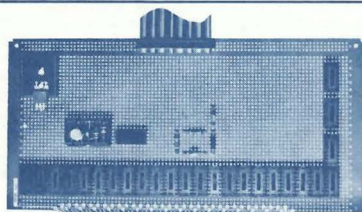
**Part No. 8800V . . . . . \$24.95 each**

## PAD-PER-HOLE PLUGBOARD NO. 8801



Great flexibility — ideal for mounting wrap post tail sockets or components by "tack" soldering. Individual tinned square pads surround most holes. (Pads may lift off if excessive soldering heat is applied.) Heavy tinned power and ground buses are provided on board periphery, and one provided regulator position has prewired power and ground connections. Top of board has a quarter-inch two-hole-wide copper-free area for mounting I/O connectors or other devices. Use R681-1 or R-681-2 connector. Includes heat sink and mounting hardware.

**Part No. 8801 . . . . . \$26.95**



## Board Without Pads or Buses No. 8801-1

Same size and connector finger specifications as other S-100 boards listed on this page, but supplied without etched bus and pad pattern for economy and maximum component mounting flexibility in the overall grid of .042" diameter holes. Drilled ejector holes and regulator mounting holes in one position are provided; mates with R681-1 or R681-2 connector. .125" spacing.

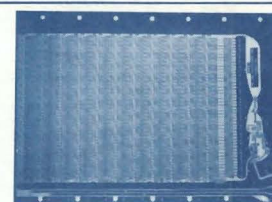
**Part No. 8801-1 . . \$19.95 each**



## S-100 "ANY-DIP" Plugboard No. 8804

The 8804 "ANY-DIP" plugboard is compatible with Altair and Imsai microcomputer boards, and holds up to 70 14- or 16-pin DIPs or any combination of DIPs with 0.3, 0.4, 0.6, or 0.9 inch spacing. The 8804 is ideal for custom or homebrew interfacing. The board also consists of two 50-hole rows of .125" spaced pads across the top, and power and ground buses in an offset ladder pattern on opposite board sides, two regulated positions, one pre-wired and one with a furnished heat sink. The dimensions of the 8804 are 10" x 5.3" x 1/16". Use R681-1 or R681-2 connector.

**Part No. 8804 . . . \$26.95 each**



## 8803 Motherboard for S-100 Microcomputer Plugboards

This board has 11 connector mounting positions and etched tinned bus lines, solder mask, and etched circuitry for active or passive termination. Board measures 8 1/2" x 11" and is FR-4 grade G-10 glass epoxy material. User must supply own termination components and receptacles with tails spaced 0.125" x 0.250" such as Vector R681-2 connector. Includes 16 mtg. spacers and 12 capacitors.

**Part No. 8803 . . . . . \$39.95**

**R681-1 Mating Connector . . . . . \$7.95 each**  
• 50/100 Contacts • Wire-Wrap • .125" Spacing • 3-Level

**R681-2 Mating Connector . . . . . \$6.95 each**  
• 50/100 Contacts • Wire-Wrap • .125" Spacing • 1-Level

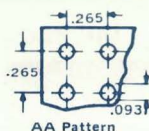




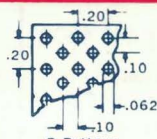
**Vector Electronic Company**  
INCORPORATED



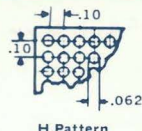
**Vectorbord®**



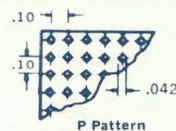
AA Pattern



G Pattern



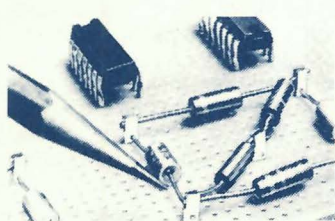
H Pattern



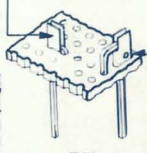
P Pattern

MATERIAL	HOLE PATTERN	STOCK NO.	HOLE SIZE (In.)	LONG (In.)	WIDE (In.)	THICK (In.)	PRICE 1-9	PRICE 10 +
PHENOLIC	AA	64AA18	.093	17.0	4.8	3/32	2.89	2.69
	P	64P44-XXXP	.042	4.5	6.5	1/16	1.79	1.65
	P	169P44-XXXP	.042	4.5	17.0	1/16	3.95	3.69
EPOXY GLASS	H	85H48WE	.062	8.5	4.8	1/16	2.89	2.69
	P	64P44WE	.042	4.5	6.5	1/16	2.49	2.29
	P	84P44WE	.042	4.5	8.5	1/16	2.95	2.79
	P	169P44WE	.042	4.5	17.0	1/16	5.95	5.49
	P	169P84WE	.042	8.5	17.0	1/16	10.95	10.29
EPOXY GLASS Copper Clad — One Side Only	P	169P44WEC1	.042	4.5	17.0	1/16	7.65	7.15

## VECTOR HARDWARE



T28-1  
(No Hole)



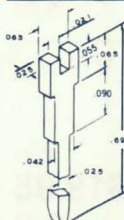
T28  
(With Hole)

Part No.	Tab Style	Material	Plating	Minimum 50 pcs.	100 pcs.	1000 pcs.
T28	.237" long w/hole-for .062" board	Copper Alloy	Tintillate	\$2.49 lot	\$3.49 C	\$13.95 M
T28-1	.125" long no hole-for .062" board	Copper Alloy	Tintillate	\$3.29 lot	\$4.49 C	\$17.95 M
T42-1	.360" long w/hole-for .042" board	Copper Alloy	Tintillate	\$2.79 lot	\$3.75 C	\$14.95 M

## VECTOR TERMINALS

WIRE WRAPPABLE TERMINALS FOR .042" DIAMETER HOLES

Series	Part No.		Material	Post Size	Height Above 1/16" Board	Length Below 1/16" Board	Insertion Tool Required	Price Per 50 pcs.		Price Per 100 pcs.		Price Per 1000 pcs.	
	Gold	Tin						Gold	Tin	Gold	Tin	Gold	Tin
T44	T44-1	T44	Phosphor Bronze	.025" sq.	.065	.500	A13	3.55	1.55	5.95	2.55	39.00	17.00
T46	T46-1	T46	Phosphor Bronze	.028" sq.	.400	.562	P133A	5.85	3.15	9.75	5.25	65.00	35.00
T49	T49A	T49	Phosphor Bronze	.025" sq.	.200	.560	P156	5.85	3.00	9.75	5.00	65.00	30.00
T49-1	T49A-1	T49-1	Phosphor Bronze	.025" sq.	.200	.388	P156	7.65	4.15	12.75	6.95	85.00	46.00



### T-44 MINIWRAP

Terminal pushes in and locks in .042" diameter hole. Has .021" component slot and .025" square tail for wrapped wire connections. Overall length .690". Phosphor bronze bright tin or nickel gold plate.



### T-46

These double ended wrap-posts are inserted into .042" diameter circuit board holes such as "P" pattern Micro-Vectorbord with P133A installation tool. The pins extend .040" above the board and .053" below 1/16" thick board.



### T-49 KLIPWRAP

Pushes into .042" diameter hole. Upper end holds leads .018" to .040" in clip action until soldered. T-49 is phosphor bronze, tin or gold plated.

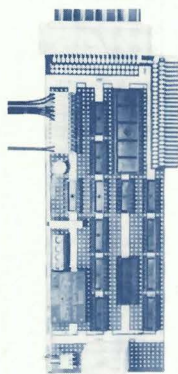
## VECTOR INSERTION TOOLS

Part No.	Terminal	Price
P91A	T28	\$4.35
P149A	T42-1	\$5.59
A13	T44	\$5.95
P133A	T46-1	\$3.95
P156	T49	\$4.95





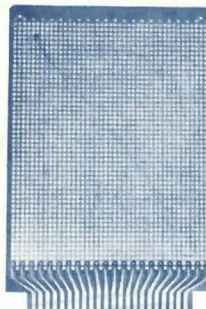
## PERIPHERAL INTERFACE BOARD — Model 4609



A peripheral interface board, plug compatible with Apple II, Commodore PET and Super-Kim microcomputers, provides many features not available on the manufacturers' own boards. Designated the Model 4609 by Vector Electronic Company, the boards have provisions for three additional types of input/output connectors, extended board area and dual heavy-duty power buses between the DIP IC leads for easy, short bus connections. Size: 3.125" W x 7.70" L.

Part No.	Description	Price
<b>4609</b>	<b>Peripheral Interface Board</b>	<b>\$22.95</b>

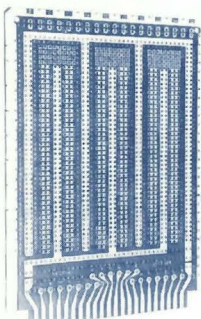
## DIP PLUGBOARD — Model 3662



Plugboard 3662 measures 4.5" x 6.5" and features 22 numbered contacts on the front with 21 lettered and 1 grounding contact on the reverse side. Plugboard contacts are copper, nickel and gold plated on .156" centers. Pre-punched grids in 1/16" epoxy glass Vector "P" pattern with .042" diameter holes on .1" x .1" centers register with DIPs, DIP sockets and similar components.

Part No.	Description	Price
<b>3662</b>	<b>DIP Plugboard</b>	<b>\$9.95</b>
22/44SE	Mating Connector for 3662	\$2.49

## DIP PLUGBOARD Model 3677-2

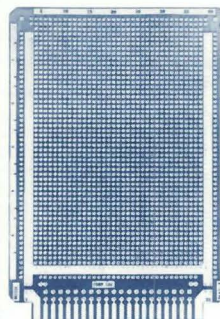


Tinned 3-hole pads for easy mounting and interconnecting with tinned buses interleaved between pad areas. 4.5" x 6.5" x .062" epoxy glass composite with 22/44 contacts on .156" centers.

Part No.	Price
<b>3677-2</b>	<b>Dip Plugboard</b> .. <b>\$14.95</b>

Part No.	Description	Price
<b>22/44SE</b>	<b>Mating Connector for 3677-2</b>	<b>\$2.49</b>

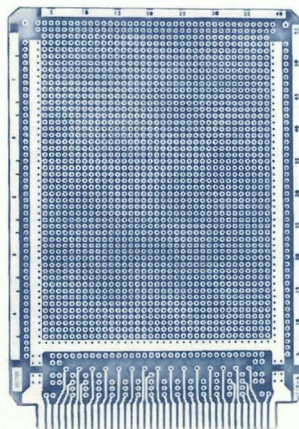
## DIP PLUGBOARD Model 3662-9



Pad-per-hole board. Quick wire wrap or solder type DIP sockets. 22/44 contacts on .156" centers. .043" diameter drilled and plated — thru holes on 0.1" grid. Component area = 51 x 35 holes. Mounts 48 16-pin DIPs horizontally. Epoxy glass FR4. 4.5" x 6.5" x .062".

Part No.	Description	Price
<b>3662-9</b>	<b>DIP Plugboard</b>	<b>\$29.95</b>

Part No.	Description	Price
22/44SE	Mating Connector for 3662-9	\$2.49



3719-6

## 3719-6 PAD-PER-HOLE PLUGBOARD

Mounts any size IC. For soldering or wire wrap. Has 36/72 gold-plated plug contacts on 0.1" centers. 4.5" x 6.5" x .062". Epoxy glass (FR-4) .043" plated thru holes on 0.1" grid. Peripheral power and ground buses. Mounts 48 16-pin DIPs. Component area = 45 x 35 holes. Numbers on board perimeter for easy hole location.

Part No.	Description	Price
<b>3719-6</b>	<b>Pad-Per-Hole Plugboard</b>	<b>\$39.95</b>
<b>R636-2</b>	<b>Mating Connector for 3719-6</b>	<b>9.95</b>

## 3719-1 ETCHED PLUG CONTACTS ONLY

Same as 3719-6 except etched plug contacts only for greater component mounting. Mounts 60 16-pin DIPs. Epoxy glass composite.

Part No.	Description	Price
<b>3719-1</b>	<b>Pad-Per-Hole Plugboard (etched plug contacts)</b>	<b>\$19.95</b>
<b>R636-2</b>	<b>Mating Connector for 3719-1</b>	<b>9.95</b>





# PRODUCTS



## JUST WRAP™ Wire Wrapping Tool

30 AWG wire (50 feet),  
fits .025" square posts.  
Daisy chain or point-  
to-point. No stripping  
or slitting required —  
just wrap. Built-in cut-  
off.

PART NO.	COLOR	PRICE
JW-1-B	(Blue)	\$17.95
JW-1-W	(White)	\$17.95
JW-1-Y	(Yellow)	\$17.95
JW-1-R	(Red)	\$17.95
<b>REPLACEMENT WIRE (50 Feet)</b>		
R-JW-B	(Blue)	\$3.79
R-JW-W	(White)	\$3.79
R-JW-Y	(Yellow)	\$3.79
R-JW-R	(Red)	\$3.79

## Strip-Wrap-Unwrap Tool



Use with 30 AWG wire on  
.025" square posts. No  
solder necessary.

**WSU-30** . . . . . \$8.95

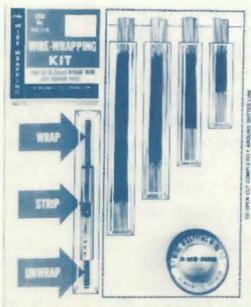
### Modified Tool

WSU-30M wraps 1 to 2 turns  
of insulated portion of wire  
for more secure connections.

**WSU-30M (Mod.)** . . . \$9.95

**STRIP WRAP UNWRAP**

## Wire Wrapping Kit — WK-2



Contains WSU-30 wrap  
tool, 50 feet of Kynar  
30 AWG white wire, 50  
pieces each pre-  
stripped wire in 1", 2",  
3" and 4" lengths,  
stripped 1" both ends.

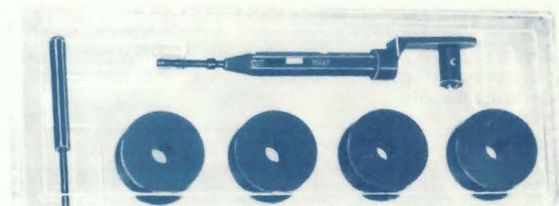
**WK-2W** . . \$15.95

## JUST WRAP™ Unwrap Tool



**JUW-1** Unwraps 30 AWG Wire . . . . . \$4.49

## JUST WRAP™ Kit



Includes JUST WRAP tool, 50 feet each of blue, white, red  
and yellow 30AWG Kynar wire and unwrap tool.

**JWK-6** . . . . . \$32.95



### "Clip and Strip" Tool

Strips 1" of insulation from  
30AWG wire. Insert wire,  
squeeze tool and pull wire  
through slot. Handy pocket  
eye. 1 1/4" x 1" x 5/8".

**CAS-130** . . . . . \$2.59



## Wire Wrap Kit

- Battery Tool BW-630 (batteries not included)
- Hobby Wrap Tool WSU-30M
- PC Edge Connector CON-1
- DIP/IC Extractor Tool EX-1
- DIP/IC Insertion Tool INS-1416
- PC Card Guides & Brackets TRS-2
- Mini-Shear with Safety Clip MS-20
- 14,16,24,40 DIP PIN Sockets
- Terminals WWT-1
- Tri-color Wire Dispenser WD-30-TRI
- Hobby Board H-PCB-1

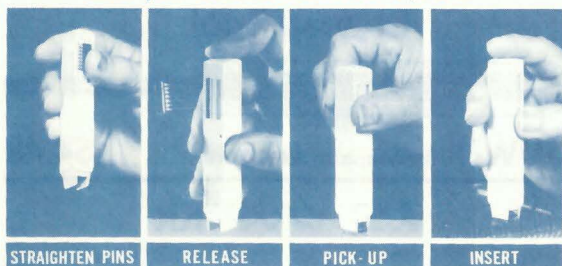
**WK-5** . . . . . \$89.95





# PRODUCTS

## DIP/IC INSERTION TOOL



Inserts both 14 and 16 pin packages. Narrow profile permits work on closely-spaced items. Pin straightener built into handle.

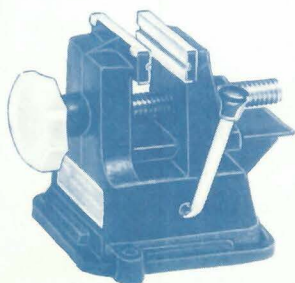
Part No.	Function	Price
INS-1416	14-16 pin (pictured above) .....	\$ 4.69
MOS-1416	14-16 pin CMOS safe (pictured at right) .....	\$10.49
MOS-2428	24-28 pin CMOS safe (pictured at right) .....	\$10.49
MOS-40	36-40 pin CMOS safe (pictured at right) .....	\$11.69



## Battery Wire Wrap Tool

Wraps 30AWG wire on standard DIP sockets (.025"). Complete with built-in bit and sleeve for "modified" style wrap. Weighs only 11 ozs. Uses 2 each "C" batteries (not included).

Part No.	Function	Price
BW630	30AWG (with bit) .....	\$39.95
BW2628	26-28AWG (with bit) .....	\$49.95
BT-30	30AWG Bit and Sleeve .....	\$ 4.95
BT-2628	26-28AWG Bit and Sleeve .....	\$ 9.95
RB-20	C-Nicad Batteries (2 each) .....	\$14.95

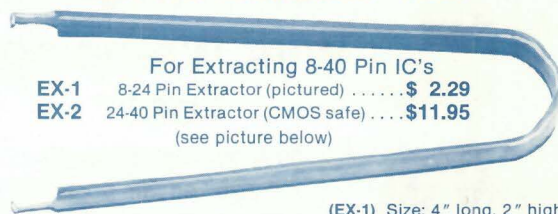


## Vacuum Vise

Vacuum-based light-duty vise for small components and assemblies. ABS construction. 1 1/2" jaws, 1 1/4" travel. Can be permanently installed. Weight: 6 oz. Size: 3"L x 3 1/2"W x 3"H

**VV-1 . . . \$4.49**

## DIP/IC Extractor Tool



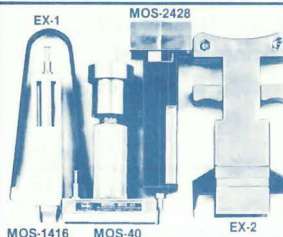
For Extracting 8-40 Pin IC's

EX-1 8-24 Pin Extractor (pictured) ..... \$ 2.29

EX-2 24-40 Pin Extractor (CMOS safe) .... \$11.95

(see picture below)

(EX-1) Size: 4" long, 2" high

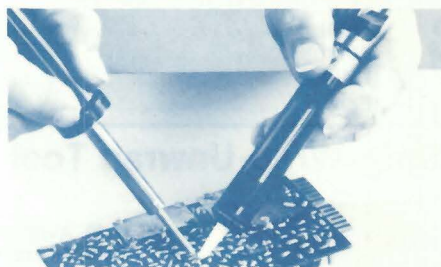


## DIP/IC Inserter-Extractor Kit

Includes MOS-1416, MOS-40, MOS-2428, EX-1 and EX-2.

**WK-7 . . . . . \$39.95**

## DESOLDER PUMP

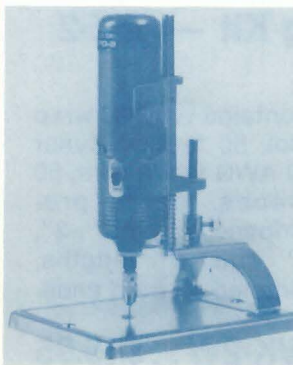


- Low static all metal construction
- One hand operation — self-cleaning
- Suction precisely regulated to protect circuitry
- Easily disassembled for cleaning
- Teflon tip — compact size

DP-1X	Desolder Pump .....	\$11.95
DPT-1	Replacement Tips (2 tips) .....	2.69

## MINI-DRILL

Lightweight, portable hand drill for PCBs. Runs at 2,500 RPM on 4 AA batteries (not included). Weighs 10.5 oz. Accepts drill bits from .019" to .058" diameter. Includes one .039" diameter bit. Optional stand holds drill firm for precise drilling.

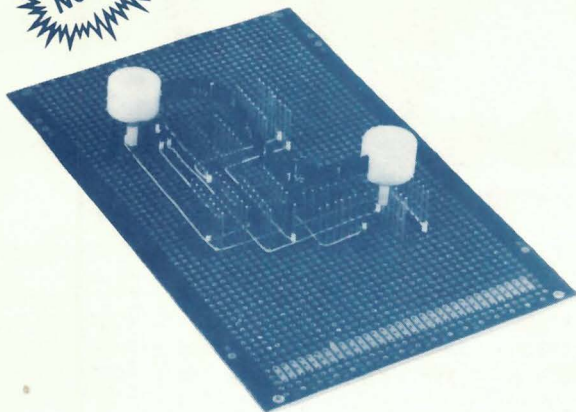


Part No.	Description	Price
PD-3	Mini-Drill .....	\$24.95
RDB-4	Replacement Bits .....	5.95
STD-50	Stand for PD-3 ..	13.95





## WRAP-AID



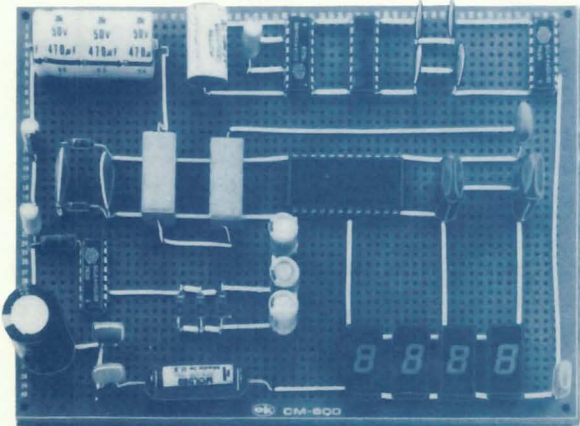
Wrap-Aid wire measuring tape ruler is designed for wire-wrapping applications. Small, easy to operate. Eliminates wasting wire and helps prevent wiring errors by identifying both posts to be wrapped. Post extensions provided for wire "routing."

Part No.

Price

**WA-1** ..... **\$4.95**

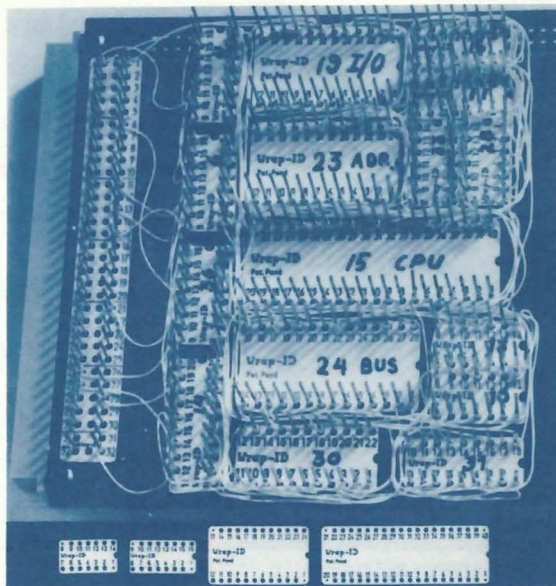
## CIRCUIT MOUNT Solderless Circuit Board



A neoprene board 4½" x 6" with 2280 holes on .100" centers. Inter-connections are made using 20 or 22 AWG wire jumpers. Features numbered rows and columns.

Part No.	Description	Price
<b>CM-600</b>	Circuit Mount Board .....	<b>\$9.49</b>
<b>RW-50</b>	Jumper Wires .....	<b>\$3.79</b>
	(50 wires — 20 AWG — ½"–4")	

## SOCKET-WRAP I.D.



Quick identification of pin numbers. Slips onto socket before wrapping. Write easily on them for location, part number, function, etc.

Part No.	Package	Price	Part No.	Package	Price
<b>14-ID</b>	(10/pkg.)	<b>\$1.99</b>	<b>24-ID</b>	( 5/pkg.)	<b>\$1.99</b>
<b>16-ID</b>	(10/pkg.)	<b>\$1.99</b>	<b>28-ID</b>	( 5/pkg.)	<b>\$1.99</b>
<b>18-ID</b>	( 5/pkg.)	<b>\$1.99</b>	<b>40-ID</b>	( 5/pkg.)	<b>\$1.99</b>
<b>20-ID</b>	( 5/pkg.)	<b>\$1.99</b>	<b>96-ID</b>	( 5/pkg.)	<b>\$1.99</b>
<b>22-ID</b>	( 5/pkg.)	<b>\$1.99</b>			

## CUT and STRIP DISPENSER

- Cuts and strips in one step.
- Strips 1" of insulation.
- Refillable
- Includes 50 feet of 30AWG Kynar wire-wrap wire



Part No.	Color	Price
<b>WD-30-B</b>	(Blue) .....	<b>\$6.49</b>
<b>WD-30-Y</b>	(Yellow) .....	<b>\$6.49</b>
<b>WD-30-W</b>	(White) .....	<b>\$6.49</b>
<b>WD-30-R</b>	(Red) .....	<b>\$6.49</b>

### REPLACEMENT WIRE (50 Ft. Roll 30AWG)

<b>R30-B</b>	(Blue) .....	<b>\$3.95</b>
<b>R30-Y</b>	(Yellow) .....	<b>\$3.95</b>
<b>R30-W</b>	(White) .....	<b>\$3.95</b>
<b>R30-R</b>	(Red) .....	<b>\$3.95</b>

## 3-Color Cut and Strip Dispenser

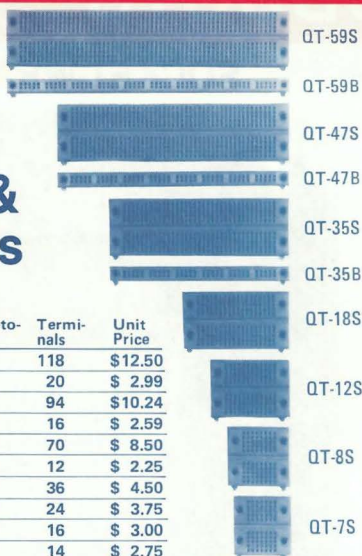
Same as WD-30. Includes 50 feet each of red, white and blue 30AWG wire wrap wire all on one dispenser.

Part No.	Price
<b>WD-30-TRI</b> .....	<b>\$9.95</b>
<b>R-30-TRI</b> (Replacement Roll) .....	<b>\$7.49</b>



## Quick Test Sockets & Bus Strips

Part No.	Length	Hole-to-hole	Terminals	Unit Price
QT-59S	6.5"	6.2"	118	\$12.50
QT-59B	6.5"	6.2"	20	\$ 2.99
QT-47S	5.3"	5.0"	94	\$10.24
QT-47B	5.3"	5.0"	16	\$ 2.59
QT-35S	4.1"	3.8"	70	\$ 8.50
QT-35B	4.1"	3.8"	12	\$ 2.25
QT-18S	2.4"	2.1"	36	\$ 4.50
QT-12S	1.8"	1.5"	24	\$ 3.75
QT-8S	1.4"	1.1"	16	\$ 3.00
QT-7S	1.3"	1.0"	14	\$ 2.75



## Wire Jumpers

Refills for WK-1

22AWG insulated solid wire. Length does not include 1/4" ends. Ends are stripped.

Part No.	Size	Color	Pieces	Price
WJ.1	.1"	Brown	200	\$2.99
WJ.2	.2"	Red	200	2.99
WJ.3	.3"	Orange	200	2.99
WJ.4	.4"	Yellow	200	2.99
WJ.5	.5"	Green	200	2.99
WJ.6	.6"	Blue	150	2.99
WJ.7	.7"	Violet	150	2.99
WJ.8	.8"	Grey	150	2.99
WJ.9	.9"	White	150	2.99
WJ-10	1.0"	Brown	100	2.99
WJ-20	2.0"	Red	100	2.99
WJ-30	3.0"	Orange	100	2.99
WJ-40	4.0"	Yellow	50	2.99
WJ-50	5.0"	Green	50	2.99
WJ-350	Assorted	Assorted	25 ea. of all above	4.99

## Wire Jumper Kit

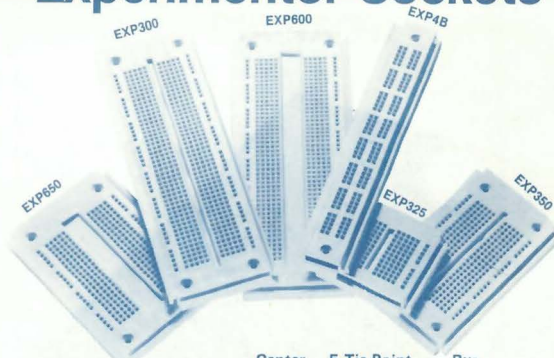


Clear Plastic Case with Cover — 8 1/4" L x 4 1/2" H x 1-5/16" D

Use with QT Sockets, Bus Strips, EXP Board, Proto Boards, etc. Pre-cut, pre-stripped 22AWG color-coded lengths, 25 pieces each — 14 lengths from 0.1" to 5.0".

**WK-1 . . . . . \$9.95**

## Experimentor Sockets



Model	Length	Width	Center Channel	5 Tie Point Terminals	Bus Strips	Price
EXP4B	6.0"	1.0"	n/a	n/a	4(160)	\$ 4.75
EXP300	6.0"	2.1"	.3"	94(470)	2(80)	\$12.00
EXP325	1.8"	2.1"	.3"	22(110)	2(20)	\$ 3.50
EXP350	3.6"	2.1"	.3"	46(230)	2(40)	\$ 6.75
EXP600	6.0"	2.4"	.6"	94(470)	2(80)	\$14.75
EXP650	3.6"	2.4"	.6"	46(230)	2(40)	\$ 8.75

## Experimentor System



**Scratchboard workpads**  
duplicates it in ink...



**Solderless breadboard**  
hole-and-connection pattern...



**Matchboard prepared PCBs**  
duplicate it in drilled foil.

### MATCHBOARD™

Printed circuit equivalent of Experimentor solderless breadboard Model EXP-300; single-sided printed circuit board (2.187" x 6.0" x .062") has been etched with contact pattern of five-place terminals and connected-terminal bus strips, equivalent to connections performed by solderless spring clips; tie point pattern is emulated by array of holes (.040") in prepared circuit board; letter/number hole index system (appears as molded-in feature on EXP-300) is duplicated in ink, screened onto non-foil side of printed circuit board, mounting holes near four corners are also duplicated.

### SCRATCHBOARD™

Hole and connection pattern of Experimentor EXP-300 and Matchboard are indicated in light blue ink on white paper worksheets, trimmed to size; ink color permits legibility in conjunction with pencil, ball point pen and felt tip pen diagrams; gummed pad includes fifty identical worksheets; letter/number hole/tie point index identical to breadboard, component side of Matchboard is included.

Part No.	Description	Price
EXP-300PC	1-Matchboard PCB's . . . . .	\$2.70
EXP-302	3-Scratchboards — 50-sheet pads . . . . .	\$3.30
EXP-303	2-Matchboard PCB's 1-EXP300 Breadboard . . . . .	\$16.00
EXP-304	2-Matchboard PCB's 1-Scratchboard — 50-sheet pad . . . . .	\$17.00
EXP-305	Accessory mounting panel locks into EXP-600, EXP-300, EXP-4P for mounting accessories . . . . .	\$1.69

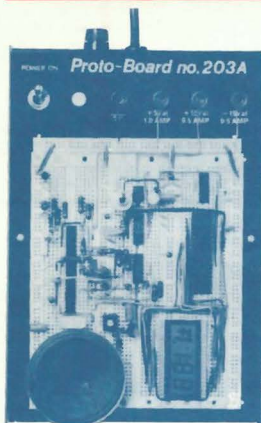


**EXP-305**  
Accessory  
mounting panel



## PROTO BOARDS AND PROTO CLIPS

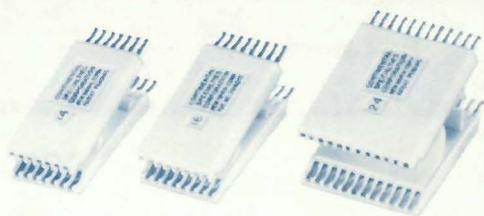
### Proto Board 203A



Includes 5VDC, 1 amp power supply. Also separate +5.5-18VDC & -5.5-18VDC power supplies, each capable of 500mA @15VDC. Voltages are independently adjusted with screwdriver. Self-contained with power switch, indicator light and power fuse. Up to 24 each 14-pin dip capacity. All metal. 9 1/2" L x 6 1/2" W x 3 1/4" H. 5 lbs.

Part No. Price  
**PB203A** (Assembled) . . . \$174.00  
**PB203AK** (Kit Form) . . . \$149.95

### Proto Clips



Now trace signals or troubleshoot fast. Inject signals or wire unused circuits into existing boards. Scope probes, test leads lock onto Dynagrip inset. Plastic construction—no springs or pivots. Thousands of operations. Narrow throat for high density pc boards.

Part No.	Description	Price
PC-14	14 Pin Proto Clip . . . . .	\$ 4.50
PC-16	16 Pin Proto Clip . . . . .	\$ 4.75
PC-24	24 Pin Proto Clip . . . . .	\$ 9.00
PC-40	40 Pin Proto Clip . . . . .	\$14.00

PB-6	PB-100	PB-101	PB-102	PB-103	PB-104	PB-105
\$19.95	\$21.95	\$28.95	\$34.95	\$59.95	\$77.00	\$115.50

Part No.	PB-6	PB-100	PB-101	PB-102	PB-103	PB-104	PB-105	*PB-203	PB-203A	PB-203AK
Sockets	1/QT47S	2/QT35S	2/QT35S	2/QT47S	3/QT59S	4/QT59S	6/QT59S	3/QT59S	3/QT59S	3/QT59S
Bus Strips	2/QT47B	1/QT35B	4/QT35B	1/QT35B 3/QT47B	1/QT47B 4/QT59B	7/QT59B	4/QT47B 7/QT59B	4/QT59B 1/QT47B	4/QT59B 1/QT47B	1/QT47B
IC Capacity (14-pin)	6	10	10	12	24	32	48	24	24	24
Terminals	126	152	188	248	450	612	912	450	450	450
Tie Points	630	760	940	1240	2250	3060	4560	2250	2250	2250
Binding Posts	4	2	1	1	4	4	5	4	4	4
Backplate	Alum.	Alum.	Alum.	Alum.	Alum.	Alum.	Alum.	Alum.	Alum.	Alum.
Length	6.0 in. 152 mm	6.0 in. 152 mm	6.0 in. 152 mm	7.4 in. 187 mm	9.0 in. 229 mm	9.8 in. 249 mm	9.2 in. 234 mm	9.8 in. 248 mm	9.8 in. 248 mm	9.8 in. 248 mm
Width	4.0 in. 102 mm	4.5 in. 114 mm	4.5 in. 114 mm	4.5 in. 114 mm	6.0 in. 152 mm	8.0 in. 203 mm	11.4 in. 290 mm	6.6 in. 168 mm	6.6 in. 168 mm	6.6 in. 168 mm
Height	1.4 in. 36 mm	1.4 in. 36 mm	1.4 in. 36 mm	1.4 in. 36 mm	1.4 in. 36 mm	1.4 in. 36 mm	1.4 in. 36 mm	3.3 in. 83 mm	3.3 in. 83 mm	3.3 in. 83 mm
Powered	No	No	No	No	No	No	No	Yes	Yes	Yes
Weight	7.0 oz. 199 gm	7.5 oz. 213 gm	9.0 oz. 255 gm	10.0 oz. 284 gm	21.0 oz. 595 gm	29.0 oz. 822 gm	29.0 oz. 822 gm	5 lbs. 2.3 kg	5.5 lbs. 2.5 kg	5.5 lbs. 2.5 kg
Shipped	Kit	Kit	Assbl'd.	Assbl'd.	Assbl'd.	Assbl'd.	Assbl'd.	Assbl'd.	Assbl'd.	Kit
Price	\$19.95	\$21.95	\$28.95	\$34.95	\$59.95	\$77.00	\$115.50	\$133.00	\$174.00	\$149.95

\*SINGLE 5VDC @ 1 AMP POWER SUPPLY



## Sweepable Function Generator — Model 2001

### SPECIFICATIONS

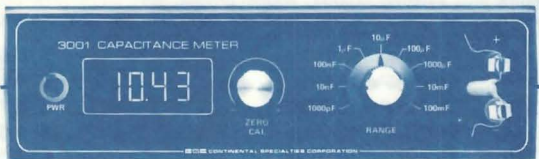


**Frequency:** 1Hz to 100KHz in 5 decade ranges, pushbutton selectable; 50-increment 10:1 dial calibrated  $\pm 5\%$  of setting at 10Hz, 100Hz, 1KHz, 10KHz. **Waveforms:** Sine, less than 2% THD; Triangle, linearity better than 1%; Square, rise and fall times under 100 nsec (600 Ohms, 20pF) for  $\pm 2\%$  time symmetry; TTL Square rise and fall times under 25 nsec. **Sweep Range:** 100:1 max; 10:1 linear range; 0 to  $\pm 10V$  Sweep input, 30,000 Ohms. **Outputs:** Hi 0.1-10 Vp-p open circuit,  $\pm 0.5V$  Vp-p into 600 ohms; Lo 1-100 mV open circuit, 0.5-50 mV into 600 Ohms; 40 dB amplitude control  $\pm 0.5$ dB flat; TTL Square drives 10 TTL loads. **DC Offset:** switch selectable;  $\pm 5V$  into an open circuit; max offset (AC+DC before clipping)  $\pm 10V$  at Hi output and  $\pm 1V$  at Lo into open circuit,  $\pm 5V$  at Hi and  $\pm 0.5V$  at Lo into 600 Ohm load. **Power:** 6 Watts @ 105-125VAC 50/60Hz. **Operating Temp:** 0-50°C (calibrated at 25°C  $\pm 5\%$ ). **Dimensions (HxWxD):** 3x10x7 (76x254x178mm). **Weight:** 2.2 lbs (1 kg).

2001 ..... \$200.00

## Digital Capacitance Meter — Model 3001

### SPECIFICATIONS



**Range:** 9 ranges, from 1999 pF to 199,900  $\mu F$  full scale. **Accuracy:**  $\pm 0.1\%$  of reading  $\pm 1$  digit  $\pm 1$  pF on 7 lower ranges;  $\pm 0.5\%$  of reading  $\pm 1$  digit on 2 upper ranges; determined at 23  $\pm 5^\circ C$ . **Temperature Coefficient:**  $\pm 0.01\%/^\circ C$  in all ranges. **Technique:** Measures  $\Delta T / \Delta V_{th}$  (Dual Threshold slope integration). **Excitation Voltage:** 3.5 Volts maximum. **Controls:** 9-position Range switch, Power on/off switch, Zero Calibrate adjustment. **Zero-Calibrate Offset Adjustment Range:** Greater than 100 pF. This allows nulling of any stray or cable capacitance appearing at the input, e.g., as when cable connects into a high volume test fixture; permits max. 18" cable. **Display:** 3 $\frac{1}{2}$ -digit high brightness 0.5" character height LED. **Overrange Indication:** Display flashes at approximately 2Hz. **Underrange Indication:** Zeroes displayed. **Input Protection:**  $\frac{1}{2}$  Amp 250V fuse. **Input Connection:** Twin banana jacks mating plug-in spring-tensioned Test Clips and Test Cable included. **Calibration Adjustment:** One internal range calibration adjustment. **Power Requirements:** 105-125VAC, 50/60 Hz, 6 Watts: 220-240VAC, 50/60 Hz optional. **Operating Temperature:** 5-45°C (40-110°F). **Size (WxHxD):** 10x3x7 inches. (254x76x178mm). **Weight:** 3 lbs. (1.4 Kg.).

3001 ..... \$325.00

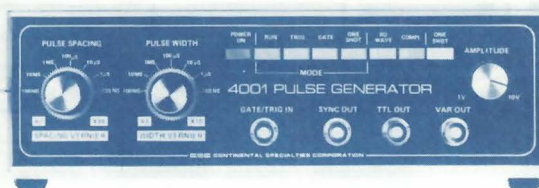
### Accessories:

**Model 333 — Tri-Mode Comparator —** speed capacitor sorting; color-coded lamps; 5-pin rear panel DIN connector; buffered outputs drive 5 TTL loads ..... \$325.00

**Model 334 — Production Test Fixture** ..... \$21.90

## Ultravariable Pulse Generator — Model 4001

### SPECIFICATIONS



**Frequency:** 0.5Hz to 5MHz. **Pulse Width, Spacing:** Independent controls, 7 ranges, continuous vernier adjustment 100 nsec to 1 sec. **Duty Cycle:** Continuous 10% range, 0.5Hz to 5MHz. **Accuracy:**  $\pm 5\%$ , calibrated at min, max settings. **Jitter:** Under 0.1%  $\pm 50$  psec. **Modes:** Run 0.5Hz to 5MHz; Trig, DC to 10MHz; Gate synchronous with leading edge, last pulse completes; One-Shot synchronous with leading edge of pushbutton actuation; Square Wave 2.5MHz max frequency, period is twice the total of Width plus Spacing; Complement inverts the output. **Trig/Gate Input:** TTL compatible, approx. 400 ohms DC coupled sine wave 4Vp-p @ 10MHz; 2V min for pulses over 40 nsec; max  $\pm 10V$ . **Outputs:** Var. Out, 0.1-10V into open circuit, 0.5-5V into 50 Ohms, adjustable under 30 nsec rise/fall; constant 50 Ohm impedance; TTL out 40 loads, less than 20 nsec rise/fall; Sync Out  $+2.4V$ , 10 TTL loads min. under 20 nsec rise/fall; 20 nsec width; leads main outputs more than 20 nsec. **Connectors:** BNC. **Power:** 6 Watts @ 105-125VAC 50/60Hz. **Operating Temp:** 0-50°C (calibrated at 25°C  $\pm 5\%$ ). **Dimensions (HxWxD):** 3x10x7 (76x254x178mm). **Weight:** 2.2 lbs (1 kg).

4001 ..... \$235.00

## Frequency Standard — Model 4401

### SPECIFICATIONS



**Outputs:** Two outputs, DC coupled, BNC connectors. **10 MHz Drive:** 50 Ohm TTL-compatible square wave, buffered to drive up to 10 TTL loads, short circuit protected, 20 nsec rise and fall into 50 Ohms. **Select Drive:** 50 Ohm TTL-compatible square wave, buffered to drive up to 10 TTL loads, short circuit protected, 20 nsec rise and fall into 50 Ohms. **Timebase:** 10 MHz crystal oven oscillator,  $\pm 0.5$  ppm from 0-40°C, oven temperature 55°C, aging less than 1 ppm/year; internal calibration user-accessible; factory calibrated to National Bureau of Standards via WWVB. **Controls:** Power; Frequency Select pushbutton scans output through 1MHz, 100KHz, 10KHz, 1KHz, 100Hz, 10Hz, 1Hz, 0.1Hz; Multiplier Select multiplies selected frequency X1, X2, or X5. **Displays:** Eight discrete LEDs indicate selected Frequency decade, selected Frequency LED also serves as power pilot, additional LED indicates Open Ready. **Power:** 105-135VAC, 57-63Hz, 5VA max. (215-250 VAC, 50-60Hz version available). **Dimensions HxWxD:** 3x10x7 inches (76x254x178mm) 2.0 lbs. (0.9 kg.). **Op Temp:** 0-40°C.

4401 ..... \$298.00

### Accessories:

**PSA-2 — 3' BNC to BNC input cable** ..... \$14.95



## Scope Multiplexer—Model 8001

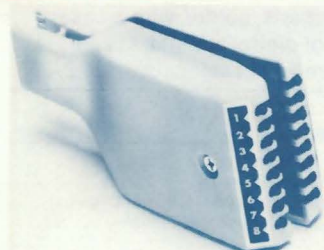


8001 Scope Multiplexer . . . . . \$349.50

## SPECIFICATIONS

**INPUTS:** 8. **Bandwidth:** Flat to 12MHz, —3db @ 20MHz. **Impedance:** 1 Meg Ohm @ 30pF (outside maximum input voltage range impedance drops to 10K ohms). **Input Voltage:** ±5Vp-p; beyond specified range input signals are clipped; absolute maximum input voltage ±50VDC (100Vp-p). **OUTPUTS:** **Vertical Output:** Staircase waveform summed with 8 input signals, 0 to 350mV. **Staircase Steps:** 50mV/step. **Signal Voltage/Step:** Variable 0 to 75mV. **Impedance:** 100 Ohms. **Trigger Output:** **Amplitude:** Minimum 2.4V open circuit. **Pulse Width:** 0.1 usec or 1 usec internally selected. **Impedance:** 100 Ohms. **CONTROLS:** **Sampling frequency:** 40KHz to 1MHz; **Trigger threshold:** adjustable —5VDC to +5VDC; **Trigger polarity** +/— edge, switch selectable; **Display select:** 1-8, 1-4, or 5-8 traces or manual; **Manual pushbutton:** increments display one trace at a time; **Zero calibration:** pushbutton zeros all traces; **Vertical gain:** adjusts signal amplitude of displayed traces. **Power:** 105-135VAC, 57-63Hz, (215-250VAC, 50-60Hz optional). **Dimensions:** 4"H x 10"W x 7"D (102 x 254 x 178mm). 5.0 lbs. (2.3 kg.). **Op Temp:** 0-40°C, Calibrated @ 25°C ± 5%.

## LOGIC MONITORS



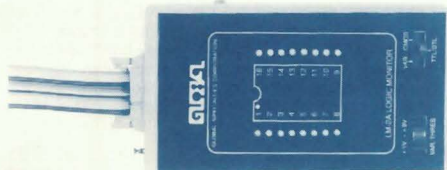
LM-1 16-Channel Logic Monitor . . . . . \$79.00

## LM-1 16-Channel Logic Monitor

## SPECIFICATIONS

Monitors to 16-pin DIP. 16 discrete LED display. Clips to 16 pin DIPs. **Impedance:** 0.1 Meg Ohm. Threshold voltage reference determines turn-on point for each of 16 LED indicators. Threshold voltage corresponds to DTL, TTL and other logic families whose logic one to logic zero differentials are 5-7 volts. **Threshold:** 2.0 ± 0.2VDC. Single mode, single logic threshold. Operating power from highest and lowest voltages appearing at its sixteen inputs, is entirely circuit-powered. **Power derived from circuit under test:** 4VDC min. 15VDC max. across any two inputs. **Max. current drain:** 200mA @ 10VDC. **Size:** 4.0"L x 2.0"W x 1.5"D. **Weight:** 3 ozs.

## LM-2A 16-Channel Logic Monitor



LM-2A 16-Channel Logic Monitor . . . . . \$150.00

## SPECIFICATIONS

Monitors up to 16-pin DIP ICs. 16 discrete LED display. **Input:** 16 channels thru right-angle header, 24" mating ribbon cable and 16-pin test clip. **Impedance:** 1.0 Meg Ohm. **Voltage Range:** ±26VDC max. **Vcc Input:** Samples Vcc of circuit under test thru case-mounted connector. **Impedance:** >20Kohm. **Voltage Range:** 0.7VDC to 20VDC max. Threshold references for 16 input channels are determined by the setting of the threshold mode selector — TTL 2.3VDC ± 0.1VDC; CMOS 70% Vcc ± 0.2VDC; variable adjustable 1.0VDC to 9.0VDC. **Controls:** Threshold Mode Select (TTL, CMOS, Variable) Variable Threshold. **Connectors:** Signal, Vcc sense, power input, threshold voltage reference test point. **Power:** 9.3VDC @ 115mA max. **Size:** 5.9"L x 3.2"W x 1.2"H. **Weight:** 15 ozs. **Includes:** Manual, LDA-8 Vcc Sense Cable, MMAC2 AC Adapter and LMA-8 16-conductor input ribbon cable.

## LM-4 40-Channel Logic Monitor



LM-4 40 Channel Logic Monitor . . . . . \$199.00

## SPECIFICATIONS

40 independent input channels. Pocket size. Displays static or dynamic logic status of 40 pins simultaneously. 40 segment LED display. **Input:** 24" ribbon cable terminated in a 40-pin test clip. **Impedance:** 1 Meg Ohm @ 30pF with 24" cable. **Logic One Threshold:** Switch Selectable — TTL 2.2V ± 0.2V; CMOS 70% of sampled Vcc. **Absolute Max. Input:** +17VDC. —10VDC for —30 sec. **Max. Operating Input:** 0 to +Vcc. **Power Reverse:** Protected to —75VDC. **Control:** TTL, DTL, CMOS slide switch sets threshold levels corresponding to selected logic family. **Power derived from circuit under test:** 4.28VDC min. to +15VDC max. **Current Drain:** 10mA (typical). **Size:** 5.9"L x 3.2"W x 1.2"H. **Weight:** 12 ozs. **Includes:** LM-4; 24" 40-conductor ribbon cable terminated in 40-pin test clip; instruction manual; plastic carrying case.

## ACCESSORIES FOR LOGIC MONITORS

Part No.	Description	Price
LMA-5	24" 40-Conductor Ribbon Cable unterminated; PC-14, PC-16, PC-24, PC-40 Proto Clip IC test clips; 10 black and 10 red quick hooks (LM-4) . . . . .	\$95.00
LMA-6	24" 40-Conductor Ribbon Cable terminated in two 16-pin Proto Clip IC test clips and 8 quick hooks (LM-4) . . . . .	74.10
LMA-7	40-Conductor Input Ribbon Cable with one PC-40 Proto-Clip IC test clip (LM-4) . . . . .	57.85
LMA-8	16-Conductor Input Ribbon Cable with one PC-16 Proto-Clip IC test clip (LM-2A) . . . . .	18.00
LMA-9	16-Conductor Input Ribbon Cable unterminated; 10 black and 10 red quick hooks (LM-2A) . . . . .	36.00
LDA-8	36" (914mm) Power Cord with Alligator Clips (LM2-A) . . . . .	3.70



## Logic Probes and Digital Pulser



SPECIFICATIONS						
PART NO. ►	LP-1	LP-2	LP-3	LPK-1	DP-1	DPK-1
Input Impedance	100,000 ohms	300,000 ohms	500,000 ohms	300,000 ohms	Output Tri-State	Output Tri-State
Min. Detect. Pulse	50ns	300ns	10ns	300ns	Autopolarity Pulse Sensing	Autopolarity Pulse Sensing
Max. Input Signal (Freq.)	10MHz	1.5MHz	50MHz	1.5MHz	Sink/Source 100mA	Sink/Source 100mA
Pulse Detector (LED)	High Speed Train or Single Event	High Speed Train or Single Event	High Speed Train or Single Event	High Speed Train or Single Event	Pulse Train: 100pps	Pulse Train: 100pps
Pulse Memory	Pulse or Level Transition Detected and Stored	None	Pulse or Level Transition Detected and Stored	None	LED Indicator flashes in Single Pulse stays lit on Pulse Train	LED Indicator flashes in Single Pulse stays lit on Pulse Train

Part No.	Description	Price
LP-1	Hand-held, instant reading of logic levels for TTL, DTL, HTL or CMOS . . . . .	\$50.00
LP-2	The economy version of LP-1. Safer than voltmeter, more accurate than scope . . . . .	\$32.00
LP-3	High speed logic probe captures pulses as short as 10ns . . . . .	\$77.00
LPK-1	Same as LP-2 with no logic select — unassembled kit (complete w/parts, solder, wire & case) . . . . .	\$23.00
DP-1	Automatic, pencil-size lab/field pulse generator. Pulse any family of digital circuits . . . . .	\$83.00
DPK-1	Same as DP-1 — unassembled kit (complete with parts, solder, wire and case) . . . . .	\$35.00

### ACCESSORIES

Part No.	Description	Price	Part No.	Description	Price
LDA-1	1.5 inch Tip . . . . .	\$1.25	LDA-6	Test Probe Adapter . . . . .	\$4.95
LDA-2	2.5 inch Tip . . . . .	\$1.25	LDA-7	Standard Banana Plug . . . . .	\$2.00
LDA-3	3 inch E-Z Hook and Adapter . . . . .	\$5.30	LDA-8	Power/Ground Leads with Alligator Clips . . . . .	\$3.70
LDA-4	3 inch Ground Clip with E-Z Hook . . . . .	\$5.65	LDA-9	Power/Ground Leads with E-Z Hooks . . . . .	\$8.70
LDA-5	3 inch Alligator Clip . . . . .	\$3.70			

## Logical Analysis Test Kits



**LTC-1 Includes:** LP-1 Logic Probe, one 3" (76mm) ground lead with alligator clip.

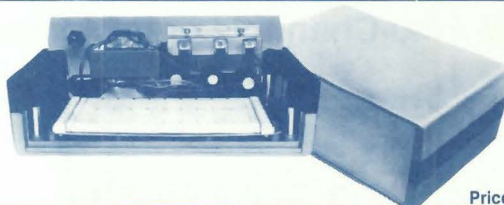
**LTC-2 Includes:** LP-3 Logic Probe, two 3" (76mm) ground leads with alligator clips.

**Both Models Include:** LM-1 Logic Monitor™ DP-1 Digital Pulser; two 1½" (38mm) probe tips, two 2½" (64mm) probe tips; one 3" (76mm) "easy-clip" adapter for use in place of probe tip; one probe tip to "easy-clip" converter, and one probe tip to banana plug converter; two 36" (914mm) power/ground leads with alligator clips; complete manuals for each instrument; custom-molded cases. Dimensions (LxWxD): 9.1 x 7.5 x 2.25 inches (231 x 191 x 57mm). Weight: 23 oz. (652 gm).

Part No.	Description	Price
LTC-1	Standard to 10MHz . . . . .	\$240.00
LTC-2	High Speed to 70MHz . . . . .	\$270.00

## THE IDEA BOX

- Contains 3 fully assembled and regulated power supplies • Expandable
- Three choices of circuit cards • Complete with hardware, grey plastic case • Outputs +5VDC @ 1.0 amp max., +15VDC @ 0.5 amp. max., -15VDC @ 0.5 amp max. • Power: 108-130VAC, 60Hz • Size: 7" L x 10" W x 4" H • Weight: 22 oz.



Part No.	Description	Price
IDB-100	Circuit card IDB-110 . . . . .	\$189.95
IDB-102	Same as IDB-100 except circuit card IDB-111 pre-etched and drilled to emulate hole . . . . .	\$169.95
IDB-103	Same as IDB-100 except circuit card IDB-112 single-sided blank foil replaces IDB-110. Usable PC board area is 8" x 4". . . . .	\$149.95

### ACCESSORIES

IDB-110	Circuit card included in IDB-100. Combines 2 QT-59S sockets, 2 QT-35B Bus Strips and 3 QT-59B Bus Strips mounted on phenolic backboard with mounting holes for use in the Idea Box case. . . . .	\$44.95
IDB-111	PC Board equivalent to IDB-110 breadboard, single-sided PC board has been etched with contact pattern and connected-terminal bus strips, equivalent to connections performed by solderless spring clips; tie point pattern emulated by array of holes (0.40" dia.) molded-in mounting holes near four corners are duplicated. . . . .	\$34.95
IDB-112	Single-sided, blank foil PC board. Make your own printed circuits and in combinations with IDB-110 or IDB-111 circuit cards . . . . .	\$ 9.95
IDB-113	Blank aluminum front panel replacement . . . . .	\$ 6.75
IDB-114	Two 50-sheet layout pads for IDB-110 or IDB-111 on pre-printed patterns to design your own circuit . . . . .	\$ 4.95



## MAX-100 Frequency Counter



- MAXimum portability — completely self-contained.
- MAXimum versatility — use with cliplead cable, in-line tap, mini-whip antenna, etc.
- MAXimum flexibility — choice of four power sources.
- MAXimum frequency range — 5Hz to 100MHz
- MAXimum data — 8 digit continuous display.
- MAXimum visibility — big, bright .43" LED display.
- MAXimum accuracy — crystal-controlled timebase.
- MAXimum operating ease — fully automatic, no controls to set.
- MAXimum range of applications — use for audio through ultrasonic through RF: AM, FM and digital.

**MAX100 (Includes 100-IPC & Instruction Manual) . . . \$169.95**

PART NO.	DESCRIPTION	PRICE
100-CA-1	117VAC 60Hz Charger/Eliminator . . . . .	\$12.45
100-MWA	Mini-Whip Antenna . . . . .	6.20
100-CLA	Cigarette Lighter Adapter . . . . .	5.95
100-IPC	Input Cable with Clip Leads . . . . .	7.45
100-LLC	In-Line RF Signal Tap (50 ohm) . . . . .	18.70
100-CC	Carrying Case (Vinyl) . . . . .	12.45
PS-500	Prescaler — Extend MAX-100 to 500MHz . . . . .	70.00
PSA-1	3 Foot DC Plug Power Cable . . . . .	3.70
PSA-2	3 Foot BNC to BNC Input Cable . . . . .	14.95
PSA-3	18" Phono to Phono Cable (connects MAX-100) . . . . .	4.95

MAX-50  
Frequency Counter

100Hz to  
50MHz

Frequency: 100Hz to 50MHz (tested min.) range, 100Hz resolution; 0.1 sec gate; 3.579545MHz crystal timebase; accuracy  $\pm 3\text{ppm}$  @  $25^\circ\text{C}$ ,  $\pm 0.2\text{ppm}/^\circ\text{C}$  from  $0-50^\circ\text{C}$  thermal,  $\pm 10\text{ppm/yr}$  aging, trimmer adjust.  $\pm 40\text{ppm}$ . Display: 6 magnified .1" LED digits, anti-glare window; leading zeroes blanked; 6 updates per sec; decimal points in kHz and MHz positions serve as pilot lights. Input: AC coupled; diode protected; greater than 1MegOhm impedance; miniature phone jack and screw (for mini-antenna accessory MMA-4) connectors; sensitivity 30mV RMS 100Hz to 30MHz, 100mV RMS 30-50MHz; max in 100Vp-p 0.1-1kHz, 75Vp-p 1kHz to 10MHz, 50Vp-p 10-50MHz. Power: Internal 9V alkaline battery or submini phone jack external power connector. Dimensions (H x W x D): 3 x 6 x 1 1/2 inches (76 x 152 x 38mm). Weight: 8 oz. (227 gm). Includes MM-IPC input cable, MMA4 mini antenna. (Battery not included). Includes instruction manual.

Part No. Price  
**MAX-50 . . . . . \$89.95**



Part No.	Description	Price
MMAC2	117VAC 60Hz Adapter . . . . .	\$12.45
MMA4	Mini Antenna . . . . .	4.95
MM-IPC	Input Cable w/Alligator Clips . . . . .	4.95

## INSTRUMENT CASES AND HARDWARE



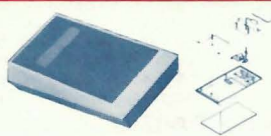
## Design Mate™ Cases

Includes blue plastic molded case; aluminum bottom plate, mounting screws. DMC-1 dimensions: 6.75 x 7.5 x 1.5 to 3.25 inches (slopes) LxWxH (171 x 190 x 38 to 83mm), 11 oz. (380 gm); usable inside area 6.0 x 6.4 x 1.3 to 3.0 in. (slopes).

**DMC-1 . . . . . \$8.75**

**DMC-2** Dimensions: 5.5 x 6.0 x 1.5 to 3.0 inches (slopes) LxWxH (140 x 152 x 38 to 76mm), 7 oz. (200 gm); usable inside area 4.8 x 5.0 x 1.3 to 2.8" (slopes). Approx. dimensions.

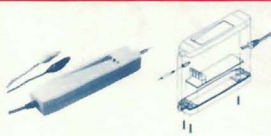
**DMC-2 . . . . . \$8.50**



## The Handheld Case

Includes grey plastic case shell halves; separate battery compartment cover; subminiature phone jack with battery snap connected; hexagonal-barrel screw-in antenna connector; red transparent plastic self-adhesive front panel; mounting screws. Dimensions: 6.0 x 3.0 x 1.5 inches LxWxH (152 x 76 x 38 mm) 4.5 oz. (113 gm); usable printed circuit board area 4.0 x 2.9 inches (not including battery compartment).

**CTH-1 . . . . . \$8.75**



## The Probe Case

Includes grey plastic case shell halves; threaded 1.5 inch (38mm) probe tip; hexagonal-barrel female probe tip connector; 36 inch (914mm) polarized two-wire power cord with red, black vinyl jacketed alligator clips attached, molded strain relief feature; pre-cut perf board; mounting screws. Dimensions: 5.8 x 1.0 x 0.7 inches LxWxH (147 x 25 x 18mm) 3 oz. (85 gm); usable printed circuit board area 3.9 x 1.0 inches.

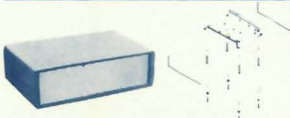
**CTP-1 . . . . . \$7.00**



## The Portable Case

Includes grey plastic case shell halves; separate battery compartment cover; 2 fitted switchplates; red transparent plastic front cover; power jack; four vinyl feet; mounting screws. Dimensions: 7.75 x 5.63 x 1.75 inches LxWxH (197 x 143 x 44mm) 9 oz. (255 gm); usable printed circuit board area 5.5 x 5.3 inches (not including battery compartment); inside height with a printed circuit board in place 1.3 inches.

**CBP-1 . . . . . \$12.95**



## The Benchtopper Case

Includes grey plastic case shell halves; front and back fitted aluminum plates; four vinyl feet; mounting hardware. Dimensions: 7.0 x 10.0 x 3.0 inches LxWxH (178 x 254 x 76mm) 15 oz. (425 gm); usable printed circuit board area 6.25 x 9.5 inches; inside height 2.75 inches; 17 printed circuit board bosses .0437 inch high.

**CTB-1 . . . . . \$19.95**



## The Benchtopper II Case

Includes grey plastic case shell halves; black extenders; front and back fitted aluminum plates; four vinyl feet; mounting hardware. Dimensions: 7.0 x 10.0 x 4.0 inches LxWxH (178 x 254 x 102mm) 22 oz. (625 gm); usable printed circuit board area 6.25 x 9.5 inches; inside height 3.75 inches; 17 printed circuit board bosses .0437 inch high.

**CTB-2 . . . . . \$28.95**

## QUICK HOOK ASSORTMENT

Tapered plastic housing permits easy access to tight areas. Spring tension allows a firm "hands off" hold onto wire wrap tails, component leads, connector terminals, turret terminals, bare wires, etc. Includes 10 insulated quick hooks (5 red, 5 black).

**QHA-1 . . . . . \$9.50**

## HARDWARE POST ASSORTMENT

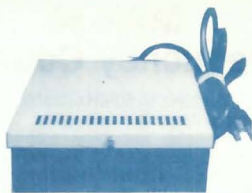
These universal binding posts permit attachment of banana plugs, tip jacks, alligator clips, ring connectors, hook connectors, space connectors and bare wire. Five red and five black binding posts, 20 insulating shoulder washers, 20 hex mounting nuts are included.

**HPA-1 . . . . . \$4.99**



# POWER SUPPLIES

975 each  
available



Size: 6 1/2" W x 7" D x 2 1/4" H

Transaction Technology, Inc.

## Power Supply

5VDC @ 1 AMP REGULATED

- Output +5VDC @ 1 amp (also +30VDC) regulated • Input 115VAC 60Hz
- Two-tone (black/beige) self-enclosed case • 6 foot, 3-conductor black power cord • Weight: 3 lbs. • Size: 6 1/2" W x 7" D x 2 1/4" H

Part No. PS51194 . . . . . \$19.95 each

140 each  
available



Size: 6 3/4" W x 7 3/4" D x 3-7/8" H

B Industries, Inc.

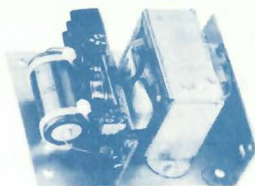
## Power Supply

5VDC @ 1 AMP REGULATED

- Output +5VDC @ 1 amp, +36 to 42VDC adjusted, 400mA or less, 30VAC (isolated) @ 1.5 amp • Input 115VAC 60Hz • Circuit breaker reset button
- Black self-enclosed case with 4 rubber feet • On/off switch • 6 foot, 3-conductor black power cord • Weight: 7 lbs. • Size: 6 3/4" W x 7 3/4" D x 3-7/8" H

Part No. PS407D . . . . . \$24.95 each

1000 each  
available



Size: 4" W x 4 1/2" L x 2-7/16" H

Deltron

## Power Supply

5VDC @ 3 AMP REGULATED

- Input: 115VAC, 47-440Hz • Output: 5VDC adjustable @ 3 amp, 6VDC @ 2.5 amp • Adjustable current limit, ripple, and noise: 1mV rms, 5mV p-p • 2 mounting surfaces • UL recognized • Weight: 2 lbs. • Size: 4" W x 4 1/2" L x 2-7/16" H

Part No. QPS-1 . . . . . \$29.95 each

540 each  
available



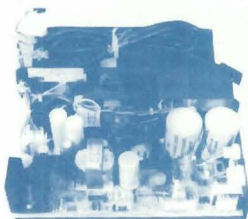
Size: 4-7/8" W x 12 1/2" L x 3 3/4" D

## Regulated Multi-Voltage Power Supply

- Input: 105 to 125VAC 47-63Hz, 205 to 250VAC 47-63Hz • Output: +5VDC @ 2 amps adjustable, +5VDC @ 50mA fixed; +12VDC @ 1 amp adjustable, -12VDC @ 2 amps adjustable • Line regulation:  $\pm 0.1\%$  • Load regulation:  $\pm 0.1\%$  • Ripple and noise:  $\pm 0.1\%$  DC to 10mHz • Overvoltage protection • Weight: 8 lbs. • Size: 4-7/8" W x 12 1/2" L x 3 3/4" D

Part No. RA0250 . . . . . \$39.95 each

1000 each  
available



Size: 11 1/2" L x 13 1/4" W x 3 3/4" D

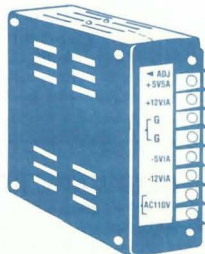
## Regulated Switching Power Supply

- Input: 115VAC 50-60Hz @ 3 amps, or 230VAC 50Hz @ 1.6 amps • Output: +5VDC @ 7.6 amps, +12VDC @ 1.5 amps • Forced air cooling • Fan voltage and power supply selector switches (115/230VAC) • Circuitry mounted on a 5 1/2" x 11 1/2" printed circuit board • All heat sink mounted for cooling • Unique for computer applications • 8 foot black power cord • Weight: 6 lbs. • Size: 11 1/2" L x 13 1/4" W x 3 3/4" D

Part No. PS94V0 . . . . . \$49.95 each

### APPLICATIONS:

- MICROPROCESSOR
- MINI-COMPUTER
- TERMINAL
- MEDICAL EQUIPMENT
- PROCESS CONTROL



Size: 6-3/8" L x 1-7/8" W x 4-15/16" H

## 4-Channel Switching Power Supply

Standard  
Stocked  
Item

- Microprocessor, mini-computer, terminal, medical equipment and process control applications • Input: 90-130VAC 47-440Hz • Output: +5VDC @ 5 amps, -5VDC @ 1 amp; +12VDC @ 1 amp, -12VDC @ 1 amp • Line regulation:  $\pm 0.2\%$  • Ripple: 30mV p-p • Load regulation:  $\pm 1\%$  • Stability: 0.1% after 8 hours • Overcurrent protection: 110-130% automatic current limiting • Adjustment: 5V main output  $\pm 10\%$  • Cooling method: convection cooled • Weight: 1 1/2 lbs. • Size: 6-3/8" L x 1-7/8" W x 4-15/16" H

Part No. FCS-604A . . . . . \$69.95 each

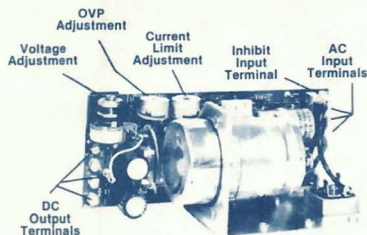
WE WILL BE SPECIALIZING IN POWER SUPPLIES — CALL OR WRITE FOR CURRENT FLYERS



# POWER SUPPLIES & DISK DRIVES

Powertec

## SM22 Series — Sub-Modular DC Power Supplies



SIZE: 7.00" L x 3.00" H x 3.30" D

Part No. 22D-300 . . . . . \$29.95

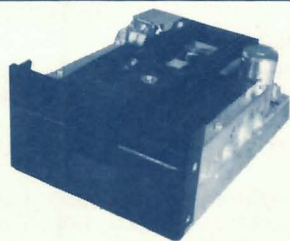
**Limited  
Quantity**

### SPECIFICATIONS AND PRICING

Qty. Avail.	Part Number	-100 *4.75V to 7.0V	-200 *7.0V to 10.5V	-300 *10.5V to 15.75V	-500 *22.0V to 30.0V	Power Transformer Requirements **(Transformers not included)		Size (Inches)	Wt.	Price
						Primary	Secondary			
1170	22AA-300			0.23A		115-120VAC	17VAC .5a no CT	2.50 x 3.00 x .98	2 oz.	\$ 9.95
647	22B-200		2.2A			115-120VAC	22VAC .3a w/CT	3.00 x 5.75 x 1.18	8 oz.	14.95
406	22B-300			1.7A		115-120VAC	28VAC 2.5a w/CT	2.75 x 5.75 x 1.18	8 oz.	19.95
456	22C-100	6.0A				115-120VAC	16VAC 8a w/CT	2.80 x 7.50 x 1.18	8 oz.	24.95
247	22C-500				2.5A	115-120VAC	48VAC 3a w/CT	2.80 x 7.50 x 1.18	8 oz.	24.95
265	22D-300			6.8A		115-120VAC	28VAC 10a w/CT	3.00 x 7.00 x 3.30	2 lbs.	29.95
88	22E-100	18.00A				115-120VAC	16VAC 24a w/CT	2.90 x 7.00 x 3.30	2 lbs.	29.95

\*Voltage adjustment range. Current ratings apply over entire voltage range.

\*\*Transformer may be purchased from: Powertec, 9168 DeSoto Avenue, Chatsworth, California 91311 Phone (213) 882-0004



(FD250 PICTURED)

Size: 5 3/4" W x 8" D x 3 1/4" H

Pertec Computer Corporation

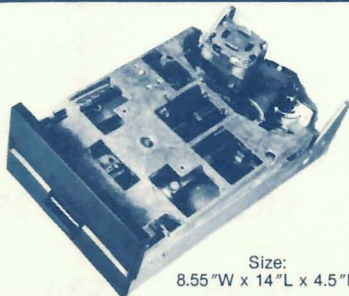
### 5 1/4" Mini Floppy Disk Drive

**500 each  
available**

For TRS-80 Model I (Industry Standard) • Single or double density • Recording mode: FM single/MFM double density • Power: +12VDC ( $\pm 0.6V$ ) 1.6 amps maximum, 5VDC ( $\pm 0.25V$ ) 0.8 amps maximum • Unit as pictured to the left (does not include case, power supply or cables) • 30 page data book included • Weight: 3 1/2 lbs. • Size: 5 3/4" W x 8" D x 3 1/4" H

Part No. FD200 Single Sided, 40 Tracks, 250K Bytes Capacity . . . . . \$179.95

Part No. FD250 Double Sided, 35 Tracks, 438K Bytes Capacity . . . . . \$199.95



Size:  
8.55" W x 14" L x 4.5" H

### Siemens 8" Floppy Disk Drive

**1000 each  
available**

The FDD100-8 8" Floppy Disk Drive is designed to work with the single-sided soft sector IBM Diskette I, or equivalent disk cartridge. A hard sector option is available. Unit as pictured to the left (does not include case, power supply or cables). • Single-sided • 77 tracks • 400/800 bytes capacity • Industry standard • Single or double density • Recording mode: FM single, MFM double density • Transfer rate: 250K bits per second single density; 500K bits per second double density • Power: 115/230VAC @ 50-60Hz, +24VDC @ 1.7 amps max., +5VDC @ 1.2 amps max. • Weight: 12 lbs. • Size: 8.55" W x 14" L x 4.5" H • 96 page Manual included.

Part No. FDD100-8 Buy 1 for . . . . . \$269.95 each

Part No. FDD100-8 Buy 2 for . . . . . \$259.95 each

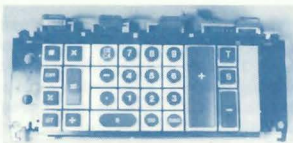
Part No. FDD100-8 Buy 10 for . . . . . \$249.95 each

— WE WILL BE SPECIALIZING IN POWER SUPPLIES AND DISK DRIVES - CALL OR WRITE FOR CURRENT FLYER —



# KEYBOARDS

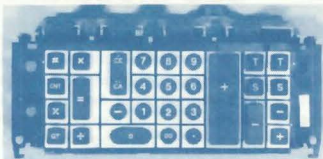
## ALPS 26-Key Keyboard



Style  
May Vary

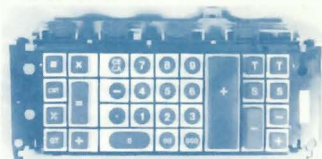
Part No. KB297226 . . . \$4.49

## ALPS 29-Key Keyboard



Part No. KB297040 . . . \$4.95

## ALPS 30-Key Keyboard



Part No. KB297043 . . . \$4.95

**DESCRIPTION:** These ALPS Keyboards made for Olivetti have four switches: one 8-position decimal select switch; two 2-position switches (one on/off); and one 3-position switch. Mechanical SPST switching has a 22-pin edge card connection. Includes pin-out diagram for each keyboard. Size: 9 3/4" L x 4 1/2" W x 1 3/4" H. Call or write for Quantity Discounts.

## STACKPOLE 19-KEY HEXADECIMAL KEYBOARD

• Mechanical SPST switching • Charcoal grey key caps • Data sheets available • Fits into DTE-8 Blank Enclosure Case (see below) • Size: 3" L x 3 3/4" W x 1 1/2" H

Part No. K-19 . . . \$14.95 each

(See page 61 for JE600 Hexadecimal Encoder Kit)



## CALCULATOR KEYBOARD



K17

2 3/4" x 3 1/2" x 1/2"  
(W x H x D)

Molded key pad assembly provides the user unlimited applications for numeric keyboard entry requirements. User may also alter the unused key pads for special key-in command requirements.

K17 (17-Key) . . . \$3.95

K18 (18-Key) . . . \$4.25



K18

2-13/16" x 3 1/2" x 1/2"  
(W x H x D)

## STACKPOLE 62-KEY KEYBOARD

• Mechanical SPST switching • Charcoal grey key caps • Data sheets available • Fits into DTE-14 Blank Enclosure Case (see below) • Size: 13" L x 3 3/4" W x 1 1/2" H

Part No. K-62 . . . \$34.95 each

(See page 61 for JE610K ASCII Encoded Keyboard Kit)



**Jameco**  
ELECTRONICS

# BLANK ENCLOSURE CASES

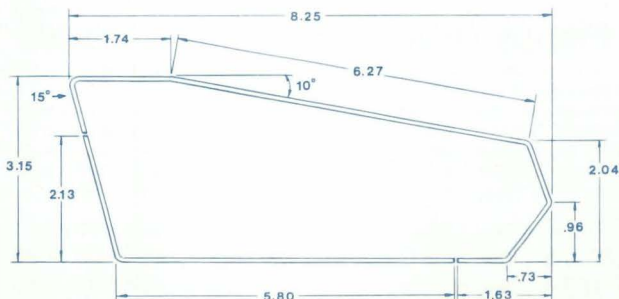


Ideal  
for  
Computer  
Keyboards

DTE-14

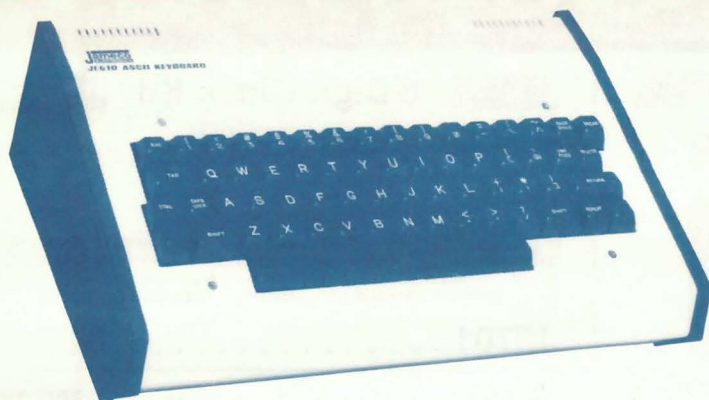
- HIGH STRENGTH EPOXY MOLDED END PIECES IN MOCHA BROWN FINISH (MAY BE PAINTED)
- SLIDING REAR/BOTTOM PANEL FOR SERVICE AND COMPONENT ACCESSIBILITY
- TOP AND BOTTOM PANELS .080" THICK ALUMINUM ALODINE TYPE 1200 FINISH (GOLD TINT COLOR) FOR BEST PAINT ADHESION AFTER MODIFICATION
- VENTED TOP AND BOTTOM PANELS FOR COOLING EFFICIENCY
- RIGID CONSTRUCTION PROVIDES UNLIMITED APPLICATIONS (ASSEMBLY INSTRUCTIONS INCLUDED)

## TOP AND BOTTOM PANEL OUTLINE



Model No.	Usable Panel Width	Price
DTE-8	7.50"	\$24.95
DTE-11	10.13"	\$27.95
DTE-14	13.50"	\$29.95
DTE-20	19.25"	\$34.95





## FEATURES:

- 60 KEYS GENERATE THE 128 CHARACTERS, UPPER & LOWER CASE ASCII SET
- FULLY BUFFERED
- TWO USER-DEFINE KEYS PROVIDED FOR CUSTOMER APPLICATIONS
- CAPS LOCK FOR UPPER CASE ONLY ALPHA CHARACTERS
- UTILIZES A 2376 (40-PIN) ENCODER READ ONLY MEMORY CHIP
- OUTPUTS DIRECTLY COMPATIBLE WITH TTL/DTL OR MOS LOGIC ARRAYS
- PARALLEL OUTPUT
- EASY INTERFACING WITH A 16-PIN DIP OR 18-PIN EDGE CONNECTOR
- SIZE: 1½" H x 6½" W x 13¼" L (JE610 KIT)

The JE610 ASCII Keyboard Kit can be interfaced into most any parallel output computer system. The kit comes complete with industrial grade keyboard switch assembly (62-keys), IC's, sockets, connector, electronic components and a double-sided printed wiring board. The keyboard assembly requires +5V @ 150mA and -12V @ 10mA for operation. Features: 60 keys generate the 126 characters, upper and lower case ASCII set. Fully buffered. Two user-define keys provided for custom applications. Caps lock for upper-case-only alpha characters. Utilizes a 2376 (40-pin) encoder read-only memory chip. Outputs directly compatible with TTL/DTL or MOS logic arrays. Easy interfacing with a 16-pin dip or 18-pin edge connector.

**JE610/DTE-AK KIT . . . . . \$124.95**

<b>JE610 Kit</b>	62-Key Keyboard, PC Board & Components (case not included) . . . . .	<b>\$79.95</b>
<b>K62</b>	62-Key Keyboard (Keyboard only) See page 60 for detailed description . . . . .	<b>\$34.95</b>
<b>DTE-AK</b>	(case only — 3¼" H x 14¼" W x 8¾" D) . . . . .	<b>\$49.95</b>

<b>JE212</b>	Negative 12VDC Adapter Board Kit for JE610 Kit (Provides -12VDC from incoming 5VDC) . . . . .	<b>\$9.95</b>
--------------	---	---------------



- FULL 8-BIT LATCHED OUTPUT MICROPROCESSOR USE
- 19-KEY HEX KEYBOARD
- 9 LED READOUTS TO VERIFY ENTRIES
- DESIGNER STYLING
- THREE USER-DEFINE KEYS
- CIRCUIT DEBOUNCE FOR ALL 19 KEYS
- INTERFACE WITH A 16-PIN DIP JUMPER CONNECTOR
- SIZE: 1½" H x 4-7/8" W x 6¼" L (JE600 Kit)

The JE600 Encoder Keyboard Kit provides two separate hexadecimal digits produced from sequential key entries to allow direct programming for 8-bit microprocessor or 8-bit memory circuits. Three additional keys are provided for user operations with one having a bistable output available. The outputs are latched and monitored with 9 LED readouts. Also included is a key entry strobe. Features: Full 8-bit latched output for microprocessor use. Debounce circuit provided for all 19 keys. Nine LED readouts to verify entries. Easy interfacing with standard 16-pin IC connector. Only +5VDC required for operation..

**JE600/DTE-HK KIT . . . . . \$99.95**

<b>JE600 Kit</b>	19-Key Hexadecimal Keyboard, PC Board & Components (case not included) . . . . .	<b>\$59.95</b>
<b>K19</b>	19-Key Keyboard (Keyboard only) See page 60 for detailed description . . . . .	<b>\$14.95</b>
<b>DTE-HK</b>	(case only — 3½" H x 8¼" W x 8¾" D) . . . . .	<b>\$44.95</b>

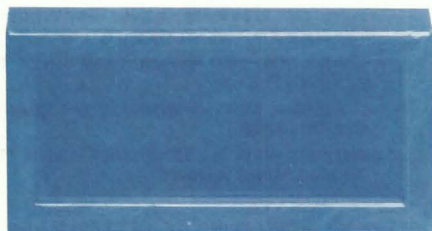


# JAMECO QUALITY KITS

Perfect for Schools, Hobbyists and Engineers



## Clock Case Kit



Simulated walnut case. Includes red bezel, 4 each wooden frame sections and plastic (ABS) back cover. Usable inside space: 2-9/16"H x 6"L x 3/4"D. Bezel opening: 2-1/8"H x 5-5/8"L. Assembly instructions included.

**JE700C . . . . . \$4.95**



## Digital Thermometer Kit

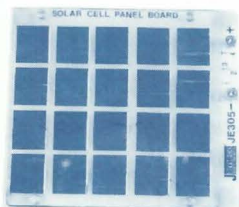


Dual sensors — switch controls for indoor/outdoor or dual monitoring — can be extended to 500 feet. Continuous LED .8" ht. display. Range: -40°F to 199°F, -40°C to 100°C. Accuracy:  $\pm 1^\circ$  nominal. Calibrate for Fahrenheit/Celsius. Simulated walnut case. AC wall adapter included. Size: 6-5/8"L x 3 1/4"H x 1 1/4"D.

**JE300 . . . . . \$39.95**



## Sun Power Your Electronics! Solar Cell Panel Kit



### Features:

- Output: 10VDC, to 100mA in Series 5VDC, to 200mA in Parallel
- Panel may be easily connected for Series or Parallel out
- Over 11 square inches of active cell surface
- Voltage line tap @ .5V increments
- Provision for charging batteries
- Overall panel size: 4 3/4"L x 4 1/2"H x 1/2"D

The JE305 Solar Cell Panel Kit contains 20 each solar cells. On the panel board are power line taps which allow the user to select voltages (one voltage at a time) from 0.5VDC to 10VDC. The applications of each panel can be further expanded by coupling additional panels in series for more voltage or in parallel for more current. The premium grade solar cells provide the current necessary for the operation of most portable transistor radios, small battery powered cassette tape players and unlimited experimental solar projects.

**JE305 . . . . . \$39.95**



## 6-Digit Clock Kit

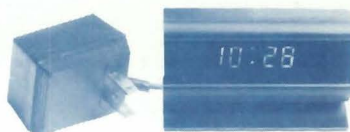


Bright .300" ht. common cathode display. Uses MM5314 clock chip. Switches for hours, minutes and hold functions. Hours easily viewable to 20 feet. Simulated walnut case. 115VAC — 12 or 24 hour operation. Includes all components, case and wall transformer. Size: 6-5/8"L x 3-1/8"H x 1 1/4"D.

**JE701 . . . . . \$19.95**



## 4-Digit Clock Kit



Bright .357" ht. common cathode display. Sequential flashing colon. 12 or 24 hour operation. Black extruded aluminum case. Pressure switches for hours, minutes and hold functions. Includes all components, case and wall transformer. Size: 3-3/16"L x 1 1/4"H x 1 1/4"D.

**JE730 . . . . . \$14.95**



## Jumbo 6-Digit Clock Kit

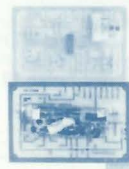


Four .800" ht. and two .300" ht. common anode displays. Uses MM5314 clock chip. Pressure switches for hours, minutes and hold functions. Hours easily viewable to 30 feet. Simulated walnut case. 115VAC — 12 or 24 hour operation. Includes all components, case and wall transformer. Size: 6-5/8"L x 3-1/8"H x 1 1/4"D.

**JE747 . . . . . \$29.95**



## Function Generator Kit



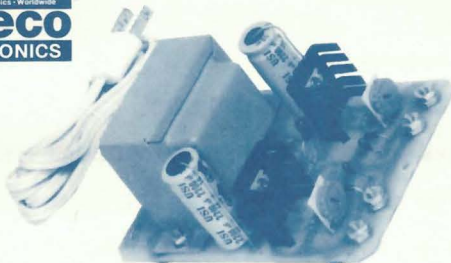
Provides three basic waveforms: sine, triangle and square wave. Frequency range from .01Hz to more than 1MHz. Output amplitude from 0 volts to over 6 volts (peak to peak). Uses a 12V supply or a  $\pm 6V$  split supply. Includes chip, PC board, components and instructions.

**JE2206B . . . . . \$19.95**

— ALL ABOVE KITS COME WITH COMPLETE ASSEMBLY INSTRUCTIONS —



# JAMECO POWER SUPPLY KITS



## ADJUSTABLE POWER SUPPLY KIT

Adjustable Positive and Negative Supplies

±5 to ±15VDC Regulated 175mA—750mA per Supply

**FEATURES** • Adjustable regulated power supplies • Positive and negative 1.2VDC to 15VDC • Power output (each supply): 5VDC @ 500mA, 10VDC @ 750mA, 12VDC @ 500mA, and 15VDC @ 175mA • Two, 3-terminal adjust. regulators w/thermal overload protection • Heat sink regulator cooling • LED "on" indicator • PC board construction • 120VAC input • Size: 3½" W x 5-1/16" D x 2"H

**JE215 Kit . . . . . \$24.95**



## Regulated Power Supply Kit

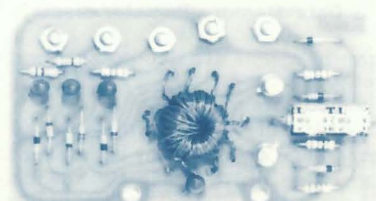


- Uses LM309K Regulator
- Heat Sink provided
- PC board construction
- Provides a solid 1 amp @ 5V
- Includes components, hardware and instructions
- 120VAC Input
- Size: 3½" L x 5"W x 2"H

**JE200 Kit . . . . \$14.95**



## Multi-Voltage Board Kit



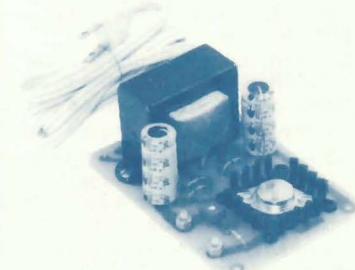
ADAPTS TO JE200  
TO SUPPLY THREE VOLTAGES

- Independent load rating at single terminal. ±12V:160mA, ±9V:200mA, -5V:250mA
- DC/DC Converter with +5V input
- Toroidal hi-speed switching XFMR
- Short circuit protection
- PC board construction
- Piggy-back to JE200 board for mounting
- Loads up to 2 watts total power
- Size: 3½" L x 2"W x 9/16"H

**JE205 Kit . . . . \$12.95**



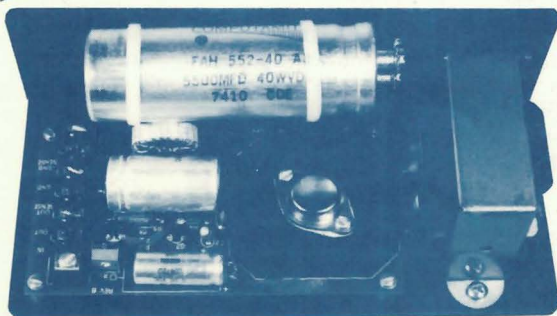
## Variable Power Supply Kit



- Full 1.5 amp @ 5-10V output
- Up to .5 amp @ 15V output
- Heavy duty transformer
- 3-terminal IC Voltage Regulator (LM309K)
- Heat Sink provided for cooling efficiency
- PC board construction
- 120VAC Input
- Size: 3½" L x 5"W x 2"H

**JE210 Kit . . . . \$19.95**

**NEW!**



## Adjustable Switching Power Supply 4 TO 24VDC REGULATED, UP TO 5 AMPS

**FEATURES:** • Adjustable: 4 to 24VDC, 5A @ 5VDC (\*Derated to 0.5A @ 24VDC) • Regulated outputs with over-voltage protection • Input: 115VAC 50/60Hz • Output variations within 20mV • Out Sense terminals • Step down regulator • Rigid frame with mounting holes • Size: 8.25" L x 4.25" W x 2.25" H • Weight: 3.25 lbs.

\*Derated current rating: 4.8A @ 6VDC; 4.1A @ 9VDC; 3.3A @ 12VDC; 1.9A @ 18VDC

The JE224 is a high-efficiency power supply utilizing a LH1605 (8-pin, TO-3 package) 5 amp switching regulator. The LH1605 provides high current output while maintaining a small physical configuration. Open frame type to allow mounting into restricted areas.

**JE224 Kit . . . . . \$79.95**

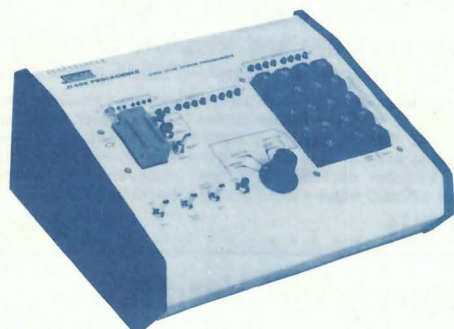
**JE224A Assembled and Tested . . . . . \$99.95**

— ALL ABOVE KITS COME COMPLETE WITH ASSEMBLY INSTRUCTIONS —



## JE608 PROGRAMMER

2704/2708 EPROM PROGRAMMER



### GENERAL APPLICATIONS:

- PROGRAMS 2704 and 2708 EPROMS
- DEVELOPMENTAL SYSTEM FOR MICROCOMPUTER CIRCUITS
- READS THE CONTENTS OF A PRE-PROGRAMMED EPROM
- COMPARES EPROM(S) FOR CONTENT DIFFERENCES
- EMULATES A PROGRAMMED EPROM
- STORES PROGRAM IN RAMS FOR ALTERATIONS

- Three separate Display Registers: 8 LED's for Hex Key entries, 10 LED's (2<sup>0</sup>-2<sup>9</sup>) for Address Register and 8 LED's for Data Memory Register. The Data Memory Register displays the content of the RAMs from the EPROM Chip.
- Development of microprocessor systems by means of a ribbon cable from the programmer panel test socket to the EPROM socket on the microprocessor board.
- Rapid checking verification of programmed data changes.
- User may move data from a master to RAM's or write into RAM's with keyboard entries.
- Allows manual stepping manipulation (up and down) at any address location.
- Stand-alone EPROM Programmer consisting of: A 19-key Hexadecimal Keyboard assembly, Programmer Board assembly with 4 power supplies and a LED/Test Socket Panel Board assembly. The Test Socket is zero force insertion type. Power requirements: 115VAC, 60Hz, 6W.
- Compact desk-top enclosure: Color-coordinated designer's case with light tan panels and molded end pieces in mocha brown. Size: 3 1/4"H x 11"W x 8 3/4"D. Weight: 5 lbs.

The JE608 EPROM Programmer is a completely self-contained unit which is independent of computer control and requires no additional systems for its operations. The EPROM can be programmed from the Hexadecimal Keyboard or from a pre-programmed EPROM. The JE608 Programmer can emulate a programmed EPROM by the use of its internal RAM circuits. This will allow the user to test or pretest a program for a system, prior to programming a chip. Any changes in the program can be entered directly into the memory circuits with the Hexadecimal Keyboard so that rewriting the entire program will not be necessary. The JE608 Programmer contains a Programmer/Board with 25 IC's and includes power supplies of: -5V, +5V, +12V and +26V. The Hexadecimal Keyboard and LED/Test Socket Panel board are separate assemblies within the system.

**JE608K Kit** ..... **\$399.95**

**JE608A Assembled and Tested** ..... **\$499.95**

## JE608-16K ADAPTER BOARD FOR 2716\*/2758 EPROMS

### GENERAL DESCRIPTION:

The JE608-16K Adapter Board allows the JE608 Programmer to be modified for the additional programming of the 2716\* and 2758 EPROMS. The adapter provides for adding an address switch for the 2<sup>11</sup> bit and also for selecting the proper power and timing pulses to be applied to the EPROM.

Programming and emulating the 2716\* (16K) EPROM is done separately to each half (1024x8) of the EPROM because of the existing 8K RAM capacity in the JE608 Programmer.

**JE608-16K** Adapter Board Kit ..... **\$29.95**

**JE608-Upgrade** (Send assembled JE608 to factory for adapter installation of the JE608-16K Adapter Board Kit) **\$99.95**

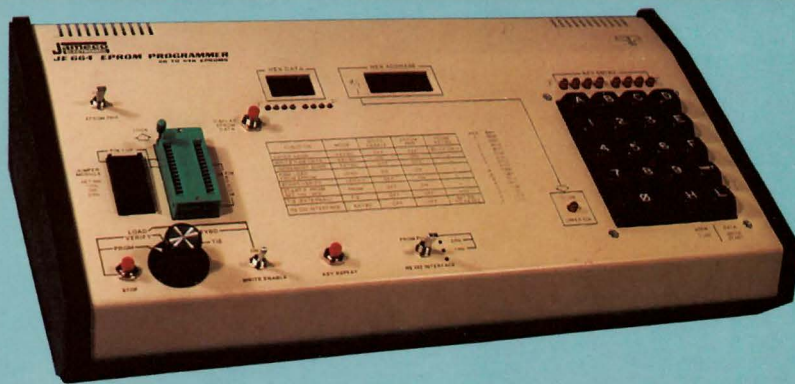
**JE608A-16K Mod.** Assembled JE608 w/Adapter (JE608-16K) Installed .... **\$599.95**



## JE664 EPROM PROGRAMMER

8K TO 64K EPROMS — 24 AND 28 PIN PACKAGES

COMPLETELY SELF-CONTAINED — REQUIRES NO ADDITIONAL SYSTEMS FOR OPERATION



- Programs and validates EPROMs • Checks for properly erased EPROMs • Emulates PROMs or EPROMs
- RS232C Computer Interface for editing and program loading • Loads data into RAM by keyboard • Changes data in RAM by keyboard • Loads RAM from an EPROM • Compares EPROMs for content differences • Copies EPROMs • Power Input: 115VAC, 60Hz, less than 10W power consumption • Enclosure: Color-coordinated, light tan panels with molded end pieces in mocha brown • Size: 15-5/8" L x 8 3/4" D x 3 1/2" H • Weight: 5 1/4 lbs.

The JE664 EPROM Programmer emulates and programs various 8-Bit Word EPROMs from 8K to 64K-Bit memory capacity. Data can be entered into the JE664's internal 8K x 8-Bit RAM in three ways: (1) from a ROM or EPROM; (2) from an external computer via the optional JE665 RS232C BUS; (3) from its panel keyboard. The JE664's RAMs may be accessed for emulation purposes from the panel's test socket to an external microprocessor. In programming and emulation, the JE664 allows for examination, change and validation of program content. The JE664's RAMs can be programmed quickly to all "1"s (or any value), allowing unused addresses in the EPROM to be programmed later without necessity of "UV" erasing. The JE664 displays DATA and ADDRESS in convenient hexadecimal (alphanumeric) format. A "DISPLAY EPROM DATA" button changes the DATA readout from RAM word to EPROM word and is displayed in both hexadecimal and binary code. The front panel features a convenient operating guide. The JE664 Programmer includes one JM16A Jumper Module (as listed below).

**JE664-A EPROM Programmer** — Assembled & Tested (Includes JM16A Module) ..... **\$995.00**

**JE665 — RS232C INTERFACE OPTION** — The JE665 RS232C Interface Option implements computer access to the JE664's RAM. A sample of software written in BASIC is provided for the TRS-80® Model I, Level II Computer. Baud rate: 9600. Word Length: 8 Bits — Odd Parity. Stop Bits: 2. This option may be readily adapted to other computers.

**JE664-ARS EPROM Programmer with JE665 Option** ..... **\$1195.00**  
Assembled and Tested (Includes JM16A Module)

**EPROM JUMPER MODULES** — The JE664's JUMPER MODULE (Personality Module) is a plug-in Module that pre-sets the JE664 for the proper programming pulses to the EPROM and configures the EPROM socket connections for that particular EPROM.

JE664 EPROM JUMPER MODULE NO.	EPROM	EPROM MANUFACTURER	PRICE
JM08A	2708	AMD, Motorola, National, Intel, TI	\$14.95
JM16A	2716, TMS2516(TI)	Intel, Motorola, National, NEC, TI	\$14.95
JM16B	TMS2716 (3 Voltages)	Motorola, TI	\$14.95
JM32A	TMS2532	Motorola, TI	\$14.95
JM32B	2732	AMD, Fujitsu, NEC, Hitachi, Intel	\$14.95
JM64A	MCM68764, MCM68L764	Motorola	\$14.95
JM64B	2764	Intel	\$14.95
JM64C	TMS2564	TI	\$14.95



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